JUNE, 1952

Commercial Refrigeration

AND AIR CONDITIONING

In This Issue:
How To Sell More Air Conditioning To THE BIG

- Offices
- Food Stores
- Specialty Shops
- Industrial Plants
- Institutions
- Restaurants

IDEAS SELL • IDEAS SELL • IDEAS SELL • IDEAS SELL • IDEAS SELL • IDEAS SELL • IDEAS SELL

MERCHANDISING, SELLING, INSTALLATION AND MAINTENANCE OF COMMERCIAL REFRIGERATION AND AIR CONDITIONING EQUIPMENT

New features + greater value = more sales for you

Jordon DISPLAY CASES

More Sales at less cost! That's what your customers want . . . that's what these new Jordon Display Cases give them! Designed to induce maximum sales . . . constructed to deliver completely reliable operation at minimum cost . . . Jordon gives your customers the finest dollar for dollar value on the market today!

Look at these plus Jordon Features:

- **All welded heavy gauge steel construction**
- **Greater storage capacity for the floor area used**
- **Designed for maximum product visibility**
- **Extra heavy non-settling Fibreglas insulation**
- **All seams vapor sealed**

All Jordon Self-Contained Refrigerators are backed by a one year warranty on parts and workmanship and an additional 4 year warranty on the hermetic unit.

Same model with all the same features is also available in sliding solid doors at no extra cost.

sliding door Wall Case with exclusive Jord-O-Matic coil

Here is the extra refrigerator value your prospects want . . . 25% more storage capacity with no increase in floor area . . . Perfect uniform refrigeration at minimum operating cost with exclusive Jord-O-Matic ceiling-mounted blower coil. Choose between solid or Thermopane doors, white hi-baked enamel or stainless exterior.

JORDON glass front Dairy Case with mart-type superstructure

A great volume builder in any store featuring dairy products . . . Jordon non-fogging Thermopane glass front . . . full-width top opening . . . Superior Jordon "Auto-Body" Hi-Baked enamel finish . . . large mart-type superstructure . . . these all build "plus" profits for storeowners . . . "plus" sales for you!

See your Jordon Sales Representative or contact

Jordon
REFRIGERATOR COMPANY
58th & Grays Avenue • Phila. 43 • Pa.

If it's Jordon . . . it's Reliable Refrigeration

Circle No. 1 on Reader Service Card for more information

THERMO EXPANSION VALVES

TYPE 402
with pressure limiting feature

TYPE TK
"3 valves in 1"

TYPE TCL

TYPE TR
Multi-Outlet

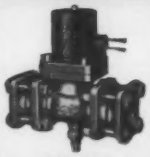
For automatic control of liquid refrigerant on all types of refrigeration and air conditioning systems. Capacities: from fractional tonnage to 50 tons "Freon-12", 100 tons Methyl Chloride. Low temperature valves for −40° F. to −100 F.

SOLENOID VALVES

TYPE S1

TYPE S2

TYPE M3



TYPE R2

For all types of service. For liquid: "Freon"—up to 75 tons. Methyl Chloride—up to 150 tons. For suction: "Freon"—up to 8.8 tons. Methyl Chloride—up to 17 tons. For brine, water, gas, air and steam.

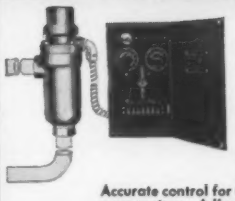
FLOAT VALVES AND SWITCHES

TYPE HK
high pressure float valve

Up to 5 tons "Freon-12", 10 tons Methyl Chloride and 20 tons Ammonia.

TYPE J5
electric float switch

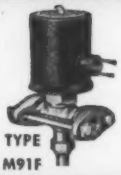
For "Freon", Methyl Chloride, Ammonia and other non-corrosive liquids having a specific gravity of .6 or more. Up to 460 volts AC and 250 volts DC.



908 LECTRO-LEVEL electronic remote control of liquid level

Accurate control for full-flooded evaporators. Adjustable to a wide range of level changes. Easy-to-set control dials conveniently mounted in remote box. Successfully used for over 5 years.

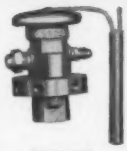
AMMONIA CONTROLS



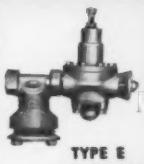
TYPE M91F

TYPE TG

TYPE UGZ



TYPE TX

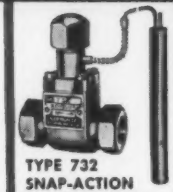


TYPE E
with Strainer

SUCTION LINE CONTROLS

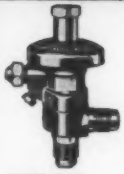
TYPE EPR

For all refrigerants, with connection sizes up to 6"



TYPE 732
SNAP-ACTION SUCTION VALVE

Temperature operated —½ ton, "Freon-12"—1 ton, Methyl Chloride.



TYPE 760
"EVAPOTROL"

Pressure regulator—½ ton, "Freon-12"—¾ ton, Methyl Chloride.

Solenoid Liquid Valves — up to 172 tons. Solenoid Suction Valves — up to 28 tons. Thermo Expansion Valves—from fractional tonnage to 125 tons. Automatic Expansion Valves — from fractional tonnage to 60 tons.

ALCO VALVES

the COMPLETE LINE of refrigerant controls

For capacities in excess of those listed, write us for further details and give specific requirements.

ALCO ALSO MAKES: Constant Pressure Expansion Valves — Liquid and Suction Line Strainers.

AVAILABLE AT YOUR WHOLESALER'S

ALCO VALVE CO.

843 KINGSLAND AVE. • ST. LOUIS 5, MO.

Circle No. 2 on Reader Service Card for more information

JUNE, 1952

VOLUME 9, No. 6

Commercial Refrigeration

AND AIR CONDITIONING

Established 1944 as
THE REFRIGERATION INDUSTRY

THIS MAGAZINE has no official affiliation with ANY group, society or association.

Address communications to

COMMERCIAL REFRIGERATION
AND AIR CONDITIONING

1240 Ontario Street
Cleveland 12, Ohio
Phone: Superior 1-9622
Teletypewriter: CV-233

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Murray Hill 7-3420

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520 N. Michigan Ave.
Room 734
Whitehall 3-1655

LOS ANGELES 17
FRED W. FRISENFELDT
1250 Wilshire Boulevard
Room 607
Tucker 6703

LONDON, E.C.4, ENGLAND
JOHN A. LANKESTER
5 New Bridge St.
Fleet Street

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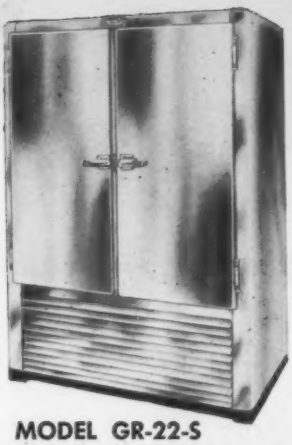
Glenco
REFRIGERATION CORP.

The Name that Signifies the Best Value for Your Dollar

Has, by special arrangement with the **STAR METAL MFG. CO., INC.**, designed and mass-produced a new, complete line of all-metal, welded refrigerators, with lustrous stainless steel fronts, and natural aluminum finished ends and interiors. The **GLENCO CORPORATION** offers the dealer and consumer, Quality Refrigeration, at New Low Prices.

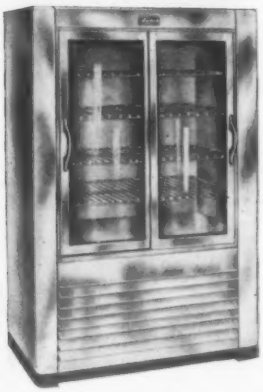


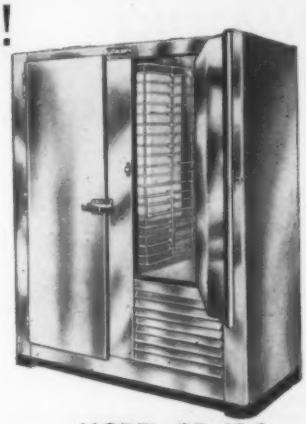
MODEL GR-22-S
Cap.—22 C.F. L.—48" D.—24" H.—70"

A Show Window Under Refrigeration!

GLENCO Display Refrigerator

MODEL GR-27-S
Cap.—27 C.F. L.—54"
D.—24" H.—74"





MODEL GD-42-S
Cap.—42 C.F. L.—54"
D.—32½" H.—74"

MODEL GR-65-S
Cap.—65 C.F. L.—80"
D.—32½" H.—74"

MODEL GS-37-S
Cap.—37 C.F. L.—54"
D.—32½" H.—74"

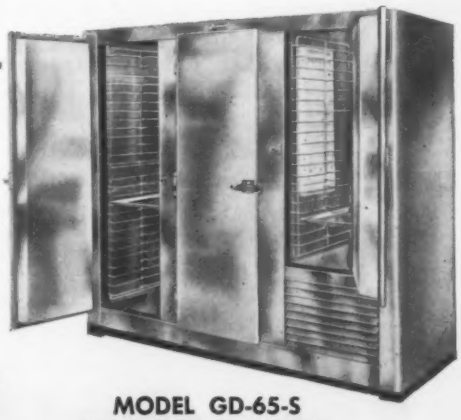
SHOWING MEANS SELLING!

★

BUY A SAMPLE LINE TODAY!

★

Write for the New CATALOG G-1 *Now!*



MODEL GD-65-S
Cap.—65 C.F. L.—80"
D.—32½" H.—74"

GLENCO REFRIGERATION CORP. JANNEY and ANN STREETS
PHILADELPHIA 34, PENNA., U.S.A.

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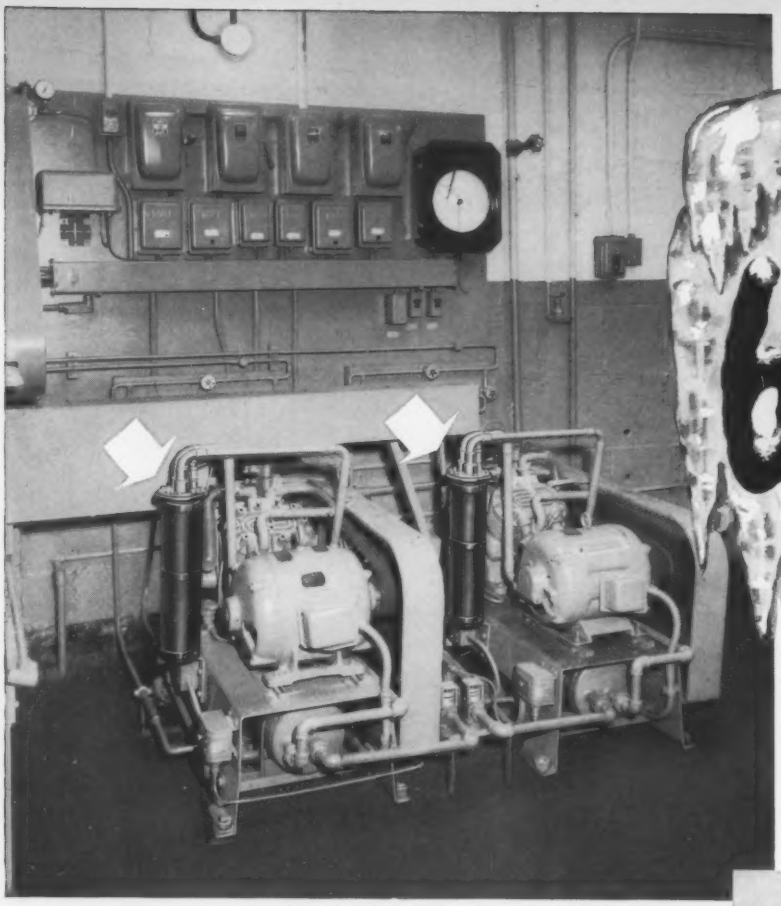

...with the help of

TEMPRITE OIL SEPARATORS

Once again, dramatic proof is established! Once again, Temprite Oil Separators provide the answer to increased refrigerating efficiency!

A large battery manufacturer wanted to maintain a frigid —60°F. in its test cabinets. This temperature was achieved only after Temprite Oil Separators were attached to the compressors!

Why? Because, as always, a Temprite traps the escaping oil and automatically returns it to the compressor . . . *to keep it away from the evaporator and condenser walls!* Oil in these latter areas definitely minimizes heat transfer, while oil free evaporator coils permit the refrigerant to boil at its true boiling point. *These factors are constant,* no matter what temperature is desired. The use of a Temprite Oil Separator will increase refrigerating efficiency from 15% to 20% or more. *Ask your jobber or write direct.*

Refrigerated laboratory test cabinets of large battery manufacturer

Since 1929

Temprite

PRODUCTS CORPORATION

BIRMINGHAM, MICHIGAN

TEMPRITE PRODUCTS CORP. *"Be right with Temprite"*
P.O. Box 72-B, East Maple Rd.
Birmingham, Michigan

☐ Send name of your local distributor.
☐ Send me complete data on your oil separators

Name_____

Address_____ Zone_____

City_____ State_____

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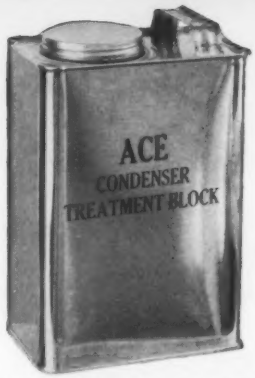
KEEP HEAD PRESSURE *DOWN!*

WITH ACE CONDENSER TREATMENT BLOCKS

Proven for three years in hundreds of condensers. ACE Condenser Treatment Blocks are compounded ONLY with chemicals recommended by highest water treating authorities.

KILLS:
SLIME - ALGAE

PREVENTS:
CORROSION and SCALE
GRADUALLY REMOVES SCALE ALREADY FORMED

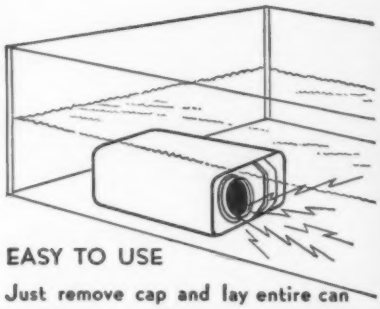


MOLDED IN GALLON CANS FOR CONVENIENCE

PROTECTS:
GALVANIZING——
WOODEN COOLING TOWERS FROM ROTTING

CUT EMERGENCY CALLS IN HALF!

This was done last season by a large air conditioning company on their maintenance contracts, where ACE CONDENSER TREATMENT BLOCKS were used.



EASY TO USE

Just remove cap and lay entire can in drip pan. Treatment gradually dissolves into condenser water.

ACE CONDENSER TREATMENT BLOCKS:

Keep operating costs and excessive wear down by keeping head pressure down . . . protect against deterioration and replacements due to corrosion.

SAVE EQUIPMENT and ELECTRIC POWER
(it is estimated that each 10 lbs. reduction in head pressure saves 10% of electric power!)

"Use ACE CONDENSER TREATMENT BLOCKS and eliminate many hot weather headaches."

TABLE SHOWS NUMBER OF ACE CONDENSER TREATMENT BLOCKS REQUIRED FOR 300 HOURS OPERATION—BASED UPON SIZE OF SYSTEM AND TOTAL HARDNESS OF FEED WATER.

SIZE OF SYSTEM IN TONS REFRIGERATION	TOTAL HARDNESS OF FEED WATER											
	1 GPG	2 GPG	3 GPG	4 GPG	5 GPG	6 GPG	7 GPG	8 GPG	9 GPG	10 GPG	11 GPG	12 GPG
5T	1	1	1	1	1	1	1	1	1	1	1	1
7½T	1	1	1	1	1	1	1	1	1	1	2	2
10T	1	1	1	1	1	1	1	2	2	2	2	2
15T	1	1	1	1	1	2	2	2	2	2	3	3
20T	1	1	1	2	2	2	2	3	3	3	3	4
25T	1	1	1	2	2	2	3	3	3	4	4	4
30T	1	1	2	2	2	3	3	4	4	4	5	5
40T	1	2	2	3	3	4	4	5	5	6	6	7
50T	1	2	2	3	4	4	5	6	6	7	8	8
60T	1	2	3	4	4	5	6	7	8	8	9	10
75T	2	2	3	4	5	6	7	8	9	10	11	12
100T	2	3	4	6	7	8	10	11	12	14	15	16
125T	3	4	5	7	9	10	12	14	15	17	18	20
150T	4	4	6	8	10	12	14	16	18	20	22	24
200T	5	6	8	11	14	16	19	21	24	26	29	32

Write today for complete data.

ATLANTIC CHEMICAL & EQUIPMENT COMPANY
874 Ashby Street, N.W. Atlanta, Georgia

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specify
ACME CONDENSERS

and you meet every sales requirement

Through practical experience and constant research Acme Engineers have developed a wide variety of models and sizes of Freon, Ammonia, Shell and Coil and Shell and Tube Condensers. The Acme Condenser Line is varied enough to permit the selection of the right model and the right size unit to meet *every* requirement.

FREON CONDENSERS

Exclusive method of tube support eliminates noise.
Easy to clean.
Leak proof joints.
Combination Heads.
More than 120 different sizes.
A.S.M.E. Certification.

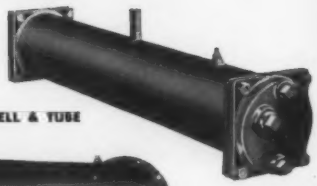
MODEL SRF

Shell & Coil and Shell & Tube CONDENSERS

Shell & Coil
Drainable Coils
Compact
Inexpensive

Shell & Tube
Cleanable tubes
Inexpensive
Compact
Dual Pass (J300 & larger)

SHELL & COIL



SHELL & TUBE

AMMONIA CONDENSERS

Exclusive Locknut Construction Available
Rolled-in or Welded Tubes
A.S.M.E. Construction and Certification
Locknut Assembly for Easy Replacement
Custom Built

AMMONIA

These are only a few of the features and advantages that have made ACME Condensers the choice of the heavy refrigeration Industry for quality, design and lasting performance. Write for catalog on equipment you require.

ACME ALSO MANUFACTURES:

Dry-Ex* Water Coolers • Hi-Peak* Water Coolers • Flow-Cold* Liquid Chillers • Fin Coils • Cooling Towers • Oil Separators • Liquid Receivers • Heat Exchangers • Bio-Cold* Industrial Unit Coolers • Flow-Cold Refrigeration Units • Convectors

* Trade Mark

ACME INDUSTRIES, INC.
Dept. CF
Jackson, Michigan

ACME PRODUCTS

continuously serving the refrigeration industry since 1919

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our Customers
who made it possible

As we start on our 86th year of continuous operation, we want to express our appreciation to our thousands of customers in the Arts and Industry who have made possible our progress from a small beginning to an important unit in American business.

You'll bear with us for being a bit proud of our record—the highlights of which are mentioned below.

At the same time, we pledge to all customers, old and new, a continuance of the high quality of *product* and *service*, and the constant seeking for improvement that have become traditional with us.

Handy & Harman

General Offices: 82 Fulton St., New York 38, N. Y.

OFFICES AND PLANTS: *BRIDGEPORT, CONN. • PROVIDENCE, R. I. • CHICAGO, ILL. CLEVELAND, OHIO • DETROIT, MICH. • LOS ANGELES, CAL. • TORONTO, CANADA*

DISTRIBUTORS IN PRINCIPAL CITIES

HIGHLIGHTS FROM OUR RECORD IN INDUSTRY

- First and foremost in standardizing silver solders.
- Created new silver brazing alloys to meet new industrial requirements.
- Originated EASY-FLO and SIL-FOS low-temperature silver brazing alloys that set new standards of strength, speed and economy in metal joining.
- Won 6 Army-Navy "E" awards for production of EASY-FLO and SIL-FOS and for giving assistance to users during World War II.
- Helped thousands of manufacturers apply these alloys to an amazing range of metal joining in both domestic and defense production.
- Advanced silver alloy brazing uses and benefits through unceasing research, engineering aid and training programs.
- Developed new uses of silver and its alloys for Industry . . . silver-clad metals, powdered metals, solder flushed metals, silver paint, etc.

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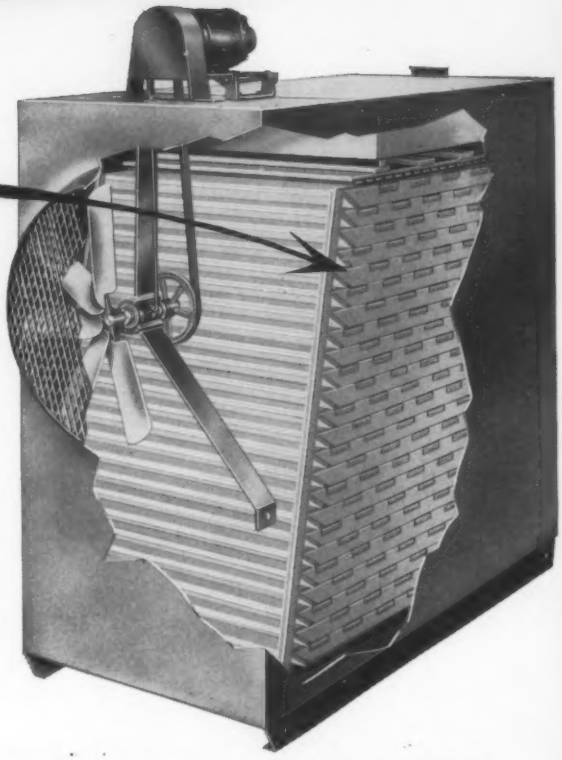
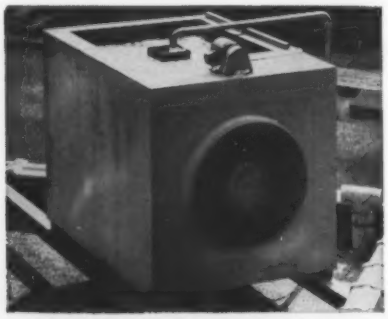
HALSTEAD & MITCHELL COOLING TOWERS

20-Year Guarantee!

On the Wetted Deck Surface of Koppers Pressure-Treated Wood



Here's the industry's greatest cooling tower value . . . "built like a battleship" for 20 years of foolproof performance. Halstead & Mitchell's pioneering in exclusive use of Koppers pressure-treated wood in the wetted deck surface makes possible the unprecedented 20-year guarantee against rotting, and provides the industry's most effective deterrent against fungi growth. Economical, lastworthy . . . the special H & M design for water distribution eliminates, thru the use of an efficient gravity-type distributing pan, extra pumping head required on spray type towers, also cuts down windage losses due to atomizing of water. The complete assembly is with Everdur bolts . . . disassembly is easy even after years of service. Easily accessible for cleaning through inlet on back of towers in all sizes.



MORE EFFICIENT IN ANY INSTALLATION

H&M # CT-4000 Induced-Draft Cooling Tower supplying the condensing water for 20 HP and 10 HP water-cooled condensing units in 3-story jewelry storeroom air conditioning. Note open-type distributing pan. This installation also has remote water basin in basement for year-round operation.

HOUSING—10 gage (⅛"+) sheet-steel case with 3 coats Bitumastic lining. Electrically welded cabinet. All bolts used are Everdur for ease of disassembly after years of service.

WATER DISTRIBUTION—Gravity type distributing pan eliminates extra pumping head, cuts down windage losses, due to atomizing water.

FAN AND DRIVE—Quiet-operating stainless steel 8-bladed fan, stainless steel shaft, chrome-dipped rust-proofed pulleys. Cast iron bearing supports. Adjustable belt tension.

5 TONS to 50 TONS

A cooling tower for all applications, from 5 to 50-ton capacities—made by Halstead & Mitchell, one of the world's largest manufacturers of water-cooled Cleanable Condensers.

AT LEADING WHOLESALERS EVERYWHERE

Write for descriptive bulletin and information on engineering helps.

HM Halstead & Mitchell

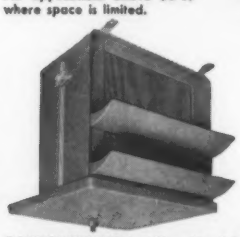
OFFICES: BESSEMER BUILDING • PITTSBURGH 22, PA.

Circle No. 11 on Reader Service Card for more information

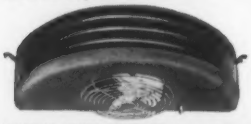
Take a closer look!

McQuay UNIT COOLERS GIVE YOU MORE FOR LESS!

TWO-WAY UNIT COOLER. For applications above 35°F. where space is limited.



PACEMAKER. Efficient "low sides," for use where fixture temperatures above 35°F. are required.



RADIAL UNIT COOLER. For above 35°F. refrigeration applications as well as economical comfort cooling.

McQuay Unit Coolers score firsts on both price and quality comparisons. You actually pay less for the best when you specify McQuay because you make important savings in installation, operation and service costs.

Only McQuay Unit Coolers offer the high heat transfer efficiency of Ripple-Fin Coils. In the complete McQuay line you will find the right type and size to meet your exact requirements.

Write for catalog No. 97. Representatives in principal cities.
McQuay Inc., 1643 Broadway St. N. E., Minneapolis 13, Minn.

McQuay INC.

AIR CONDITIONING • REFRIGERATION • HEATING

MAKE THE SEASONS COME TO YOU

Circle No. 12 on Reader Service Card for more information

MYSTIK

Self-Stik

DRI-PIPE

INSULATION

Holds Cold and Heat • Prevents Condensation

MYSTIK DRI-PIPE—the insulation with "self-stik" edges—goes on fast, saves time and money on installation. Ideal for low-temperature applications—on cold water lines, cold air ducts, refrigeration lines. Holds temperatures, prevents condensation and dripping, eliminates icing and frosting on refrigeration lines. Also has extensive other cost-cutting insulation uses—on warm water lines, warm air ducts and for sound deadening. Ask your supplier or . . .

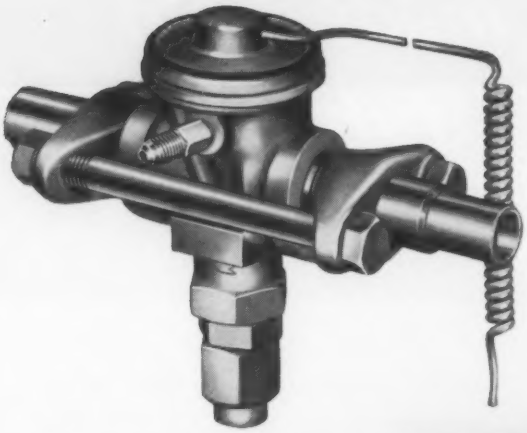
WRITE NOW for free sample of MYSTIK Self-Stik DRI-PIPE Insulation to Mystik Adhesive Products, 2662 N. Kildare, Chicago 39, Ill.

MYSTIK CLOTH TAPES • MYSTIK PAPER MASKING TAPES • MYSTIK SPRA-MASK • MYSTIK PROTECTO-MASK • MYSTIK SAND-BLAST

Circle No. 13 on Reader Service Card for more information

Now . . . You can be sure of . . .

Positive Control on Locker Plant Installations with DETROIT Low Temperature, Liquid Charged Expansion Valves



DETROIT'S outstanding liquid "Z" charged valves are built specifically for low temperature application with a special body designed to stay at saturation temperature and stabilize the charge. These superior valves give motor overload protection during pull-down and will feed accurately under all conditions.

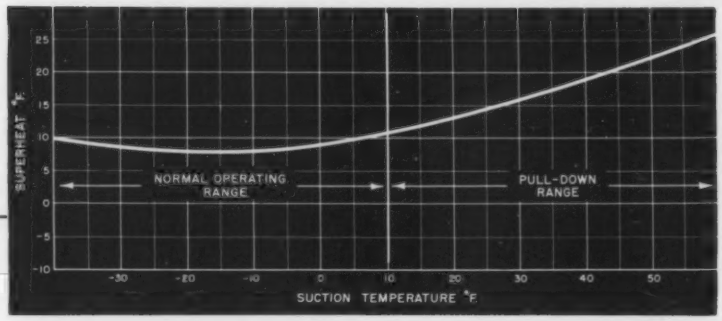
The outstanding DETROIT liquid "Z" charge feature is available in the Nos. 786 and 787 large capacity valves, and in the No. 777 valves for smaller capacities. Try them—we're sure you'll agree that they're true standouts from every standpoint!

DETROIT 786 AND 787 EXPANSION VALVES

- ★ May be installed in any position
- ★ May be installed inside locker or cabinet in coldest location
- ★ Will give positive control under all conditions

Freon-12 capacities with liquid "Z" charge at —20° F. suction temperature and 100° F. condenser temperature . . .

No. 786	3.1 tons
No. 787	5.6 tons
No. 777	.25 and .5 tons
No. 777-E	.5 and 1.0 tons



Typical superheat curve *of* DETROIT *"Z" Charged Low Temperature Expansion Valves. High superheat during pull-down starves evaporator to give motor overload protection.*

DETROIT
LUBRICATOR COMPANY

5900 TRUMBULL AVE., DETROIT 8, MICHIGAN
REPRESENTATIVES IN PRINCIPAL CITIES
Division of American Radiator & Standard Sanitary corporation
RAILWAY & ENGINEERING SPECIALTIES, LTD.
Canadian Representatives in Montreal, Toronto, Winnipeg
EXPORT DEPT.—Box 218 Ridgefield, New Jersey

"DETROIT"

AS VITAL TO AMERICA Refrigeration AS THE FOOD IT PROTECTS!

DETROIT HEATING AND REFRIGERATION CONTROLS • ENGINE SAFETY CONTROLS • FLOAT VALVES AND OIL BURNER EQUIPMENT • DETROIT EXPANSION VALVES AND REFRIGERATION ACCESSORIES • STATIONARY AND LOCOMOTIVE LUBRICATORS

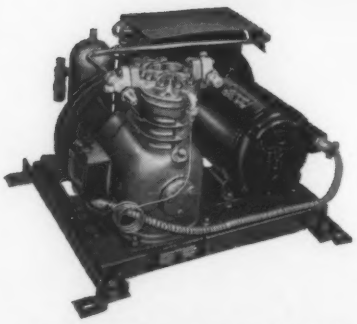
Serving home and industry

AMERICAN-STANDARD • AMERICAN BLOWER • ACME CABINETS • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON

Circle No. 14 on Reader Service Card for more information

MILLS CONDENSING UNITS
LARGE and SMALL CAPACITIES

Model 1000-W: Mills big sturdy-duty 10 h.p. Water Cooled Condensing Unit. A giant for service.



Model 25-C: Mills small ¼ h.p. Air Cooled Unit. Widely used for a variety of requirements. Dependable long-life construction.

All Provide Same Reliability and Long-Life Economy

Chosen again and again for their long-life dependability, Mills Compressors and Condensing Units, from the 10 h.p. down to the ¼ h.p. capacity, give you a range to meet the big majority of all refrigerating and air conditioning requirements.

You'll find no skimping—no over-rating. Because of proven performance, experienced engineers and service men know they can count on Mills Units long-life performance. They cost **less** per year!

MILLS INDUSTRIES, Incorporated
4100 Fullerton Ave. • Chicago 39, Illinois

Write for 60-page Bulletin 204-1

MILLS
CONDENSING UNITS

CAPACITIES FROM 10 H. P. DOWN TO ¼ H. P.

Circle No. 16 on Reader Service Card for more information

LETTERS

Asks for Advice on A Soldering Problem

EDITOR:

I ran into quite a problem this last week, and I believe that as time goes on, many more of the boys will be getting the same one to answer—so I am asking you to help give me the answer.

Recently we received in the shop for repair, a dehumidifier that had lost its charge of F-12 due to a leak in the welding or soldering being porous, and as the leak is at a joint where the coil and aluminum tubing are joined together we do not know of the right materials to get and use to re-run the joint.

The coil is aluminum and so is the tube that is welded into it. I know that we are going to run into this problem again and again as more manufacturers of refrigerators and freezers go to the use of aluminum coils and tubing. Also, where the coil is copper and the tube is aluminum. I realize that it is quite a ticklish job and that the job can be done—if you have the proper flux and rod, etc. available. I will appreciate any help that you can give us on the subject, and will be awaiting your reply.

LEROY BETTINGER
Bettinger & Fletcher
Refrigeration Co.
North Platte, Neb.

Here is what G. O. Hoglund of Aluminum Company of America has to say about this problem:

"On aluminum we know of no method of soldering that would make a permanent repair. Our experience on soldered joints would indicate that they will not have adequate life to stand up in refrigeration service.

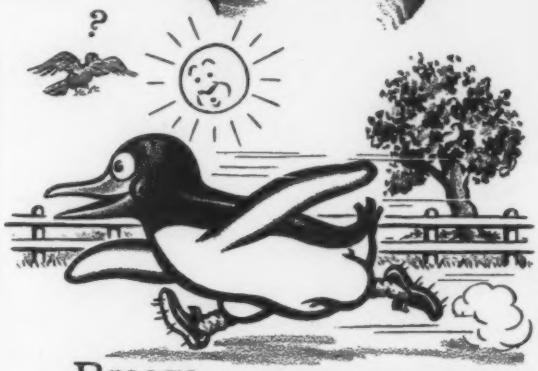
"We believe that such joints can either be torch brazed with Alcoa No. 33 flux and Alcoa No. 718 brazing wire or arc welded with the inert gas shielded tungsten arc. Some practice and training would be necessary to make such joints but the process is not difficult and I think it could be picked up after a few trials.

"The copper-to-aluminum joint is in a different category. I know no way to either solder, braze or arc weld such a joint. It is standard practice to make joints between these materials by flash welding but it is hardly practical to obtain a flash welder for maintenance purposes. Possibly a flash welded joint could

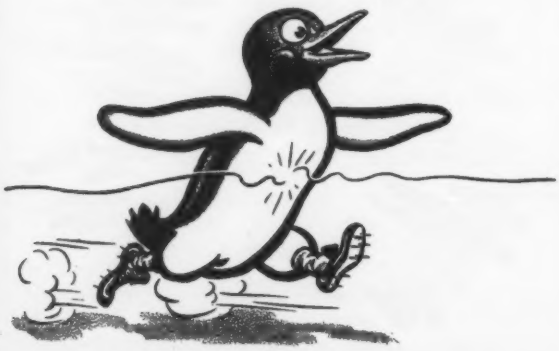
Start out with the right financing plan

to close MORE refrigeration and air conditioning sales

Check before you start. Find out how the COMMERCIAL CREDIT PLAN increases *your* cash by *lowering* receivables . . . offers you "brand name" financing, fast credit approval and national service on a local level.



Breeze along with the COMMERCIAL CREDIT PLAN. Many of your customers *need* credit to buy . . . prefer getting *immediate* use at *reasonable* rates . . . taking 2 to 3 years to pay. Don't miss out on these opportunities.



Success is the real measure of value. So join the many Distributors and Dealers already successfully using this plan . . . to show *greater* sales, *greater* profits. Make the COMMERCIAL CREDIT PLAN your plan.

For complete information, facts and figures, phone the COMMERCIAL CREDIT office in your city or write or wire COMMERCIAL CREDIT, 14 Light Street, Baltimore 2, Md.

COMMERCIAL CREDIT CORPORATION

A subsidiary of Commercial Credit Company, Baltimore . . . Capital and Surplus over $125,000,000 . . . offices in principal cities of the United States and Canada.

Circle No. 18 on Reader Service Card for more information

LETTERS

be obtained from the manufacturer of this equipment which consisted of a 3" or 4" long piece of aluminum welded to a piece of copper. This joint could then be welded or brazed on the aluminum end and silver soldered on the copper end. It might be practical for the company to have several joints in stock to take care of the problem of repair when needed."

Would readers be interested in a more detailed description of how to deal with this particular problem? If enough of you say "yes," we'll try to get Mr. Hoglund to prepare a special article on the subject.

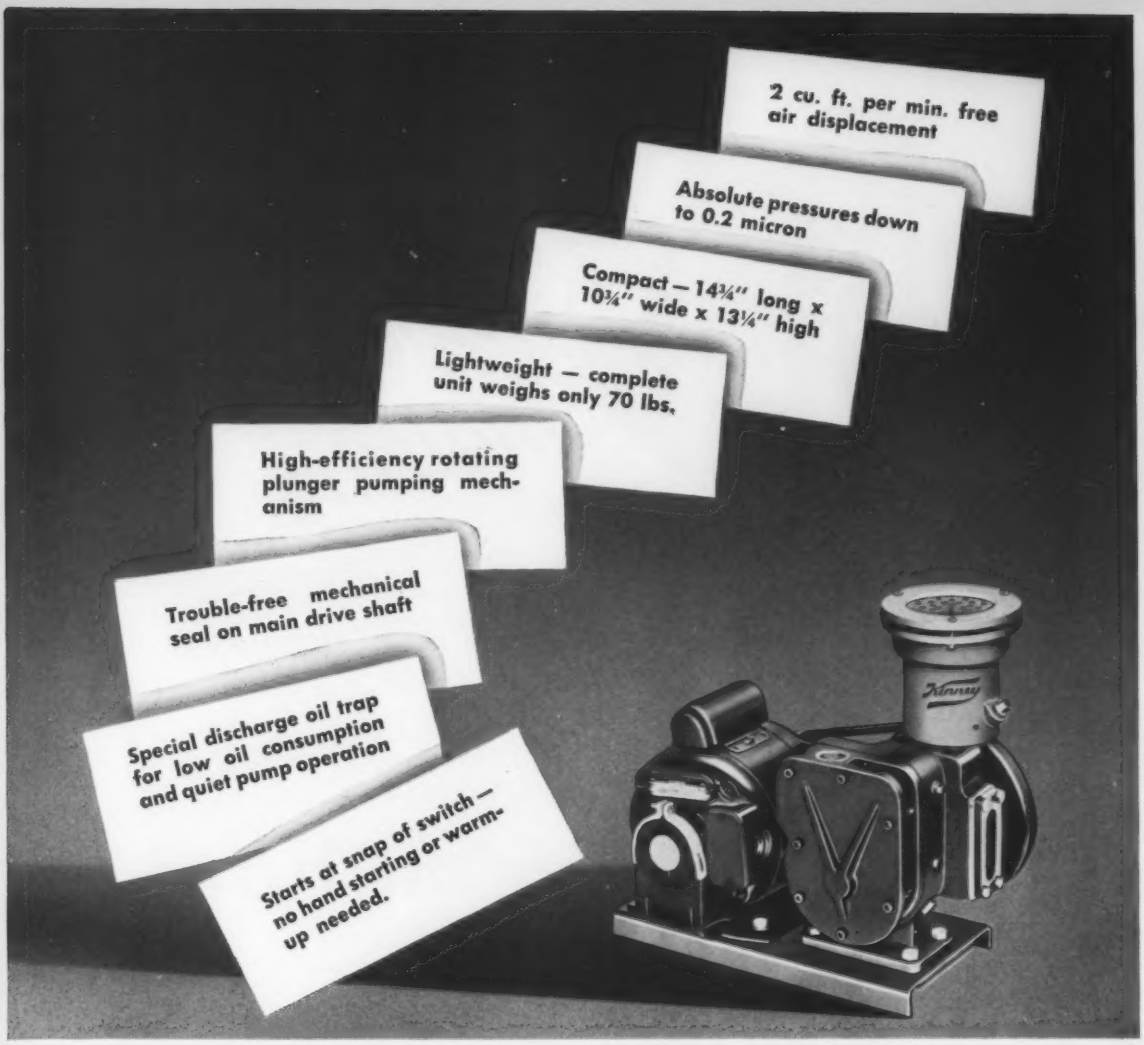
A. W. Swift of Handy & Harman's engineering division comments on this problem as follows:

"When it comes to the problem of soldering aluminum tubing to aluminum we know of a good aluminum solder manufactured by the Aluminum Co. of America under the number 803 Aluminum Solder. They also have a new alternate solder called #804 The Aluminum Co. suggests the use of the No. 64 Flux for use with these solders.

"Now in regard to the more difficult problem of joining aluminum to copper, we cannot say that we know of a real dependable alloy for this purpose. There are on the market several solders which supposedly will do this job. In fact some of them actually do do a nice appearing job of joining copper to aluminum, but to the best of our knowledge the corrosion resistance is very poor. That is, they will not last any great length of time.

"At the present time, we are working on this problem and have tried out quite a number of different alloys but we are not, as yet, satisfied that we know of an alloy that would make a good lasting joint between copper tubing and aluminum tubing. Some of the refrigeration manufacturers actually use a form of pressure weld for making this type of joint but, of course, that involves special equipment which a refrigeration contractor or serviceman would not have available.

"The best answer to this problem at the present instant would seem to be some form of mechanical joint."



This small Vacuum Pump is RIGHT for your work!

Find out today why Kinney High Vacuum Pump MODEL CVM 3153 is so widely used for laboratory projects, for full scale production installations, and for on-the-spot service and repair work. Send coupon for complete details. Kinney Manufacturing Co., Boston 30, Mass.

Representatives in New York, Chicago, Philadelphia, Cleveland, Houston, New Orleans, Los Angeles, San Francisco, Seattle, and foreign countries.

Kinney
VACUUM PUMPS

KINNEY MANUFACTURING CO. 3618 Washington St., Boston 30, Mass.

☐ Please send Bulletin SV-51 describing Kinney Vacuum Pump Model CVM 3153.
☐ Who is the Kinney Distributor in my region?

Name.....

Company.....

Street.....

City..... *State*.....

Circle No. 20 on Reader Service Card for more information

TO *the Refrigeration Industry*

FROM THE REFRIGERATION DIVISION OF ANSUL

thanks ...a million!

In less than three years
you have made ANSUL OIL the
largest selling refrigeration oil
in America, sold exclusively
through recognized refrigeration wholesalers.
For your complete and
wholehearted cooperation
at all times
ANSUL is genuinely grateful.

ANSUL CHEMICAL COMPANY
REFRIGERATION DIVISION • MARINETTE • WISCONSIN

Circle No. 21 on Reader Service Card for more information

. . . of course, it's electric!

Here's how to SELL

WESTINGHOUSE WATER COOLERS

Proof of the statement *Blue Chip Line of the Industry* is established by the outstanding percentage of the industry sales which Westinghouse obtained in 1951. And since it's always easier to sell the leader, you'll want to join up for Dealer profits.

You'll find that Westinghouse is with you all the way. In addition to our big advertising program, we have a kit full of Dealer Helps for your local promotion activities. So stock up *now.* Ask for our *How-To-Sell* Helps: Form No. 2WC-2301. See your Distributor or use the coupon at the right.

YOU'LL FIND IT PAYS TO SELL
Westinghouse

BLUE CHIP
LINE OF THE INDUSTRY

. . . to sell the leader

WESTINGHOUSE ELECTRIC CORPORATION
Electric Appliance Division • Springfield 2, Mass.

YOU CAN BE SURE . . . IF IT'S
Westinghouse

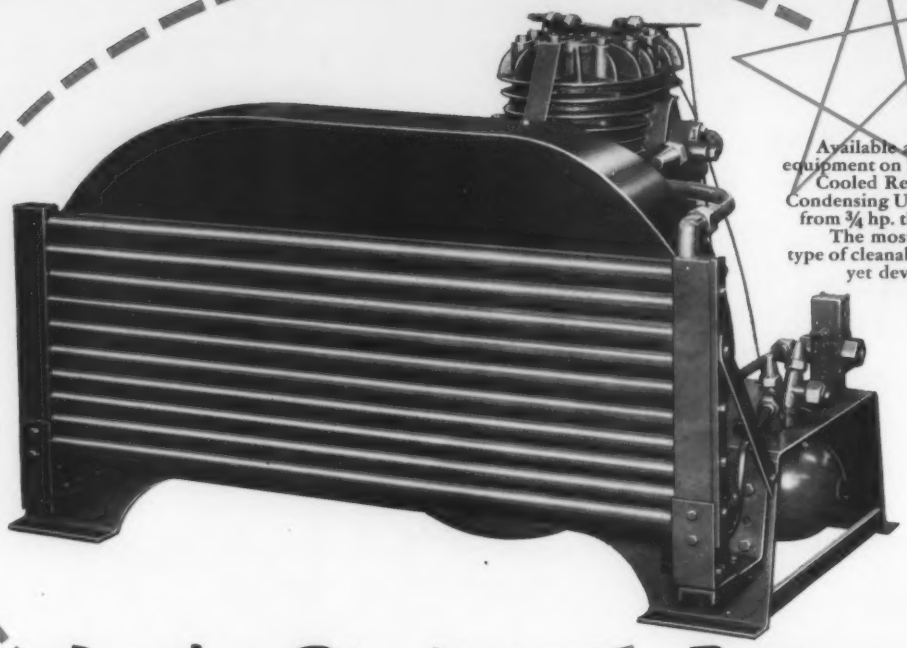
For further information on franchise openings and *How-To-Sell* Helps (2WC-2301) call your Distributor or mail this coupon.

Name_____

Street_____

City_____

State_____



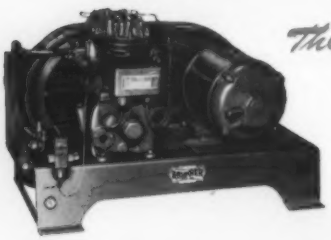
Available as standard equipment on Brunner Water Cooled Refrigeration Condensing Units in all sizes from ¾ hp. through 2 hp. The most efficient type of cleanable condensers yet developed.

Another Big BRUNNER SINCE 1906 Feature

High efficiency...counter-flow...tube-in-tube CLEANABLE CONDENSERS

Condenser heads can now be removed without special tools, tubes cleaned, and heads replaced—all in a few minutes! A timesaver on any installation. A big cost-cutter where water conditions build up scale and imperil condenser efficiency.

This is another in the long list of *star features* that make it profitable to sell, install, and service Brunner Refrigeration and Air Conditioning. Easy-to-clean condensers are typical of the value you provide in any Brunner installation—value that begins at the beginning with Brunner "open type" slow speed compressors...less wear, longer performance!



This is Worth Talking Over!

In a range of sizes and types, in a host of features, precision manufactured by our own craft workers, the Brunner line offers advantages in meeting the greatest variety of customers' needs today. Let's discuss Brunner low-cost high-efficiency refrigeration and air conditioning from your profit point of view.

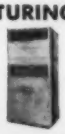
BRUNNER SINCE 1906

REFRIGERATION AND AIR CONDITIONING

BRUNNER MANUFACTURING CO., UTICA 1, NEW YORK, U. S. A.

BRUNNER SINCE 1906

AIR CONDITIONING
Self Contained Units to 10 hp.
For remote installation...Brunner Condensing Units to 75 hp.



REFRIGERATION
Condensing Units from ¼ hp. to 75 hp. . . . 69 Air and Water Cooled Models.

AIR COMPRESSORS
Single stage ¼ hp. to 2 hp. Two stage 1½ hp. to 15 hp. Horizontal and Vertical Models.

Circle No. 23 on Reader Service Card for more information

What the serviceman should know about "VIRGINIA" REFRIGERATION products

EXTRA DRY ESOTOO (bp +14°F.)

The refrigeration grade SO_2 that service and maintenance engineers have endorsed for more than 20 years. Comes in all popular cylinder sizes.

V-METH-L (bp −10.7°F.)

"Virginia" Methyl Chloride is made specifically for refrigeration use. Its low moisture content, low acidity and narrow boiling range meet the most exacting requirements.

"VIRGINIA" DISTRIBUTES...

"FREON" REFRIGERANTS
(a product of "Kinetic" Chemicals)

"FREON-113" (bp 117.6°F.) "FREON-114" (bp 38.0°F.) "FREON-11" (bp 74.7°F.)
"FREON-12" (bp −21.6°F.) "FREON-22" (bp −41.4°F.)

SUNISO REFRIGERATION OILS
PERMAGUM SEALING COMPOUND
PRESSTITE INSULATION TAPE

TO CHARGE A SYSTEM, USE REFRIGERANTS THAT ARE
CONSISTENTLY PURE, CONSISTENTLY SURE

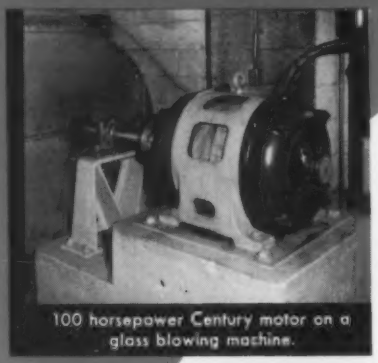
V-METH-L... WORLD-RENOWNED FOR QUALITY

Recharging with "Virginia" Methyl Chloride is a painless way to get rid of your refrigeration troubles. V-Meth-L is made specifically for refrigeration purposes . . . is consistently pure. The contents of each cylinder is tested and retested to maintain the high quality that has made V-Meth-L world renowned. Remember, the use of a good refrigerant is the first step in preventing costly and time-consuming call-backs due to sludging, copper plating, frozen expansion valves, and other troubles caused by impure refrigerants.

VIRGINIA Refrigerants

ASK YOUR WHOLESALER
OR WRITE
VIRGINIA SMELTING COMPANY
WEST NORFOLK, VIRGINIA
PHILADELPHIA • NEW YORK • BOSTON
CHICAGO • DETROIT • ATLANTA

Circle No. 24 on Reader Service Card for more information



100 horsepower Century motor on a glass blowing machine.

WHY Century MOTORIZED EQUIPMENT KEEPS YOUR CUSTOMERS *SATISFIED...*

Two 100 horsepower Century motors driving refrigeration compressors.

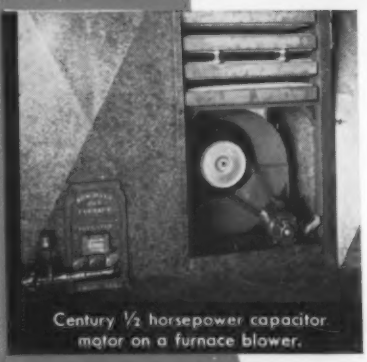
The motor specifications—where skillfully selected—to assure the TOP PERFORMANCE and DEPENDABLE QUIET SERVICE that is built into each class of equipment.

Refrigeration compressors require one combination of operating characteristics and specifications—fans and blowers another combination—various types of heating equipment still another.

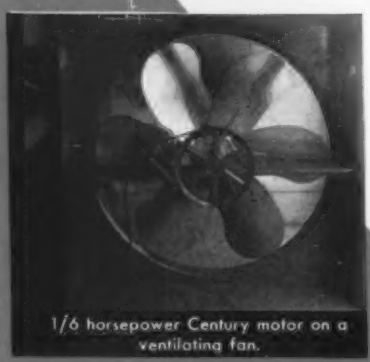
In over 50 years, Century has developed a wide line of types of motors with literally hundreds of specifications to choose from. It is easy to ENGINEER YOUR PRODUCT PERFORMANCE—THROUGH SKILLFUL MOTOR APPLICATION.

If you have motor service problems, phone or write to any of Century's 28 District offices regarding Century's national network of service stations—the motor exchange plan will serve you whether your motors are in or out of warranty.

Specify Century Motorized Equipment—get top equipment performance—dependable quiet service—keep your customers satisfied.



Century ½ horsepower capacitor motor on a furnace blower.



1/6 horsepower Century motor on a ventilating fan.

CENTURY ELECTRIC COMPANY
1806 Pine Street • St. Louis 3, Missouri

Offices and Stock Points in Principal Cities

Century C MOTORS

Circle No. 25 on Reader Service Card for more information

". . . and for air conditioning, we'll insist on Honeywell Controls"

Sure looks like cartoonist Tom Henderson's couple are rushing things. But "newly marrieds" are often like that!

It's hard to tell how their new home will look, but it's a certainty it will be blissfully comfortable, for they wisely decided to insist on Honeywell Controls for their air conditioning system.

The plain fact is – there's no better guarantee of dependable, trouble-free operation than the name Honeywell on the automatic controls for air conditioning and refrigeration.

So make your first choice Honeywell Controls – the first choice of architects, builders and consumers. For full information – or an 8½" x 9" personalized reproduction of this Henderson cartoon – write today to Honeywell, Dept. CR-6-113, Minneapolis 8, Minnesota. In Canada, Toronto 17, Ontario.

MINNEAPOLIS **Honeywell**

First in Controls

H HONEYWELL

Circle No. 26 on Reader Service Card for more information

WHY *DESTROY*

Expensive Equipment by using Destructive Substances?

Chemicals that EAT their way out of Metal, Wood or Plastic Containers are injurious to the very surfaces that they are intended to treat. If a glass container should be accidentally broken, the contents could do untold damage to valuable property!

SOLVEX

(In tablet or granular form)

LOWERS HIGH HEAD PRESSURE QUICKLY
(And May Be Used While Plant Is In Operation)

REMOVES RUST, SCALE, ALGAE
And Other Encrusting Matter from Condenser Tubes and Water Jackets in 1 to 5 Days.

CLEANS SCALE AND CORROSION FROM EVAPORATIVE CONDENSERS, BOILERS, HEATERS, TANKS . . . AND KEEPS 'EM CLEAN!

BE SAFE! USE SOLVEX!

ECONOMICAL AND SAFE TO CARRY TO CLEANING JOBS

SOLVEX Is A Very Effective CLEANING AGENT FOR AIR CONDITIONING and REFRIGERATION SYSTEMS

Manufactured by

CHEMICAL SOLVENT COMPANY

3005 16th STREET • BIRMINGHAM, ALABAMA

Circle No. 27 on Reader Service Card for more information

"General Electric quality counts with my customers... helps build my business."

Max Freeman

Refrigeration Service Engineer
302 Maryland Avenue, Paterson, New Jersey

G-E Open Unit
Water-Cooled CWC31T

FAVORITO'S FOOD CENTER, an independent self-service market in Ridgefield Circle, New Jersey, is well known to its many neighborhood customers for garden-fresh vegetables and fruits. An extensive meat department is supplied by its own large cutting room. The merchandising of these perishable items, as well as frozen foods and dairy products, requires dependable, trouble-free operation of refrigeration equipment. Shown in his modern market with Mr. Freeman is Mr. Thomas Favorito, owner.

Mr. Freeman installed and services six General Electric Condensing Units for the freezer room, walk-in room, and four display cases. He reports that his customers "ask for G-E units because of their dependability and economy of operation."

GE CONDENSING UNITS

EASY TO BUY!
EASY TO SELL!
EASY TO INSTALL!

FREE DATA ON G-E SEALED AND OPEN UNITS

General Electric Company, Section CR-7
Air Conditioning Division, Bloomfield, N. J.

Tell me the location of the G-E Parts Depot nearest me ☐
Please send me literature on G-E Open Units ☐
G-E Hermetics ☐ G-E Renewal Parts ☐

NAME.....

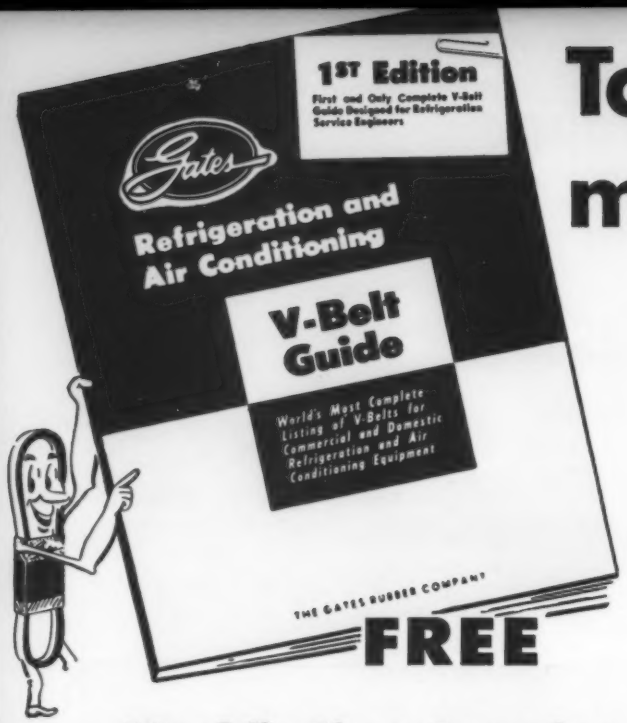
ADDRESS.....

CITY..... ZONE..... STATE.....

You can put your confidence in—

GENERAL ELECTRIC

Circle No. 28 on Reader Service Card for more information



To help you ge more busines NOW...

Here's the first complete business-building program with tested sales helps for refrigeration servicemen!

Available at no cost to you from your Gates Jobber

FREE

World's First Complete

Domestic and *Commercial*

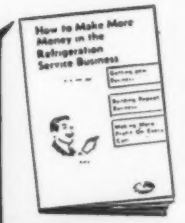
REFRIGERATION V-BELT GUIDE

Contains all V-Belt specifications not only for home appliances, but also for the large, more profitable *commercial* installations.

106 pages of valuable information including Gates V-Belt applications, changeover lists, drive data, etc.—all the belt and pulley information you need to service nearly every domestic and commercial refrigeration unit and air-conditioning unit in existence today. Get your copy from your Gates jobber.

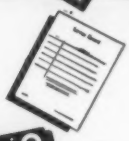
If you are in the business of servicing refrigeration and air-conditioning equipment this profit-making program is for you.

There are no strings attached—through your Gates Jobber you can get any, or all, of the tested sales helps listed here, without cost. See your Gates Jobber at once and get started on a program that will bring you more profitable service business in the months right ahead.

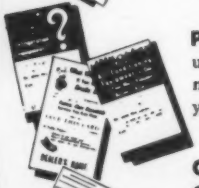


"How to Make M Money in the Refriger tion Service Business. This valuable booklet tells *ho* to get new business by design ing effective phone book ad *how* to use newspaper and di rect mail advertising; *how* t make more profit on every ca AT YOUR GATES JOBBER'

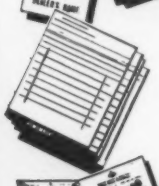
Newspaper mats. Real bus iness-getting ads . . . tested b service engineers.



Service Record Stickers to put on equipment. Space for your rubber-stamp imprint.



Printed Sales Pieces... for use as hang-up cards, direct mail or bill inserts. Space for your name.



Customer Service File Cards make it easy to keep a permanent record of every service job.

Price Card: Suggested consumer prices for Gates V-Belts and V-Pulleys. Hang in shop or truck.

Interchange Card: Handy and grease-resistant. Tells the correct Gates belt to use when replacing belts of other manufacturers.

Gates

V-BELTS

for Refrigeration and Air-Conditioning Equipment

D-525

The Gates Rubber Company • Denver, U.S.A.

World's Largest Makers of V-Belts

Here's why it's needed

Low lube oil pressure . . . or slow pickup of oil pressure at the start of a cycle . . . *can occur* unexpectedly and without warning in *any* pressure-lubricated compressor. When this happens, damage to seals and bearings may result even in the best of refrigeration compressors. To *prevent* such costly damage, PENN developed the Series 275 Oil Protection Control with built-in Time Delay Switch.

a "MUST" for pressure-lubricated REFRIGERATION COMPRESSORS

Here's how it works

When compressor starts, if the oil pressure does not build up to the proper point within a safe time period, the PENN 275 stops the compressor *automatically* before damage can occur. If oil pressure drops below a safe minimum during the running cycle . . . and does not rise to normal within the time delay period . . . the control stops compressor operation. Thus, the compressor never operates more than the predetermined safe time on subnormal oil pressure. Result? Positive, automatic protection at all times!

Investigate this new, low-cost protection for refrigeration compressors or for other pressure-lubricated equipment. For complete information ask your compressor manufacturer or wholesaler or write **Penn Controls, Inc., Goshen, Indiana.** Export Division: 13 E. 40th Street, New York 16, N. Y., U. S. A. In Canada: Penn Controls Limited, Toronto, Ontario.

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FOR HEATING, REFRIGERATION, AIR CONDITIONING, PUMPS, AIR COMPRESSORS, ENGINES, GAS RANGES

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BTU NEWS · LAWS · TRENDS

DIRECTION OF AIR FLOW, as well as quality and quantity of air, has come to be an important consideration in modern theater air conditioning. During very crowded periods such as intermission, the need for air is great. Standing patrons as well as those seated need comfortable surroundings. This problem has been solved in some instances by a new system of installation involving the use of pneumatic motors to control the angle of the diffusers in the lobby and other areas where the ceilings are low and air movement is hampered. Through means of an electric switch these dampers are adjusted to throw air sharply downward when patrons are standing, with normal horizontal angle of flow resumed when the audience again is seated.

LOCKER PLANTS IN GREAT BRITAIN are being built as fast as building restrictions will permit as a means of easing the nation's food shortages. Shortages of food rather than the luxury of choice frozen foods is the primary reason underlying the construction of these plants. Food shortages have emphasized the need for the preservation of home grown foodstuffs. British plants differ from American ones in the absence of meat other than pork, negligible retailing of frozen foods, and no bulk purchasing of produce from the plant for freezing and storage. Patrons store home grown fruits and vegetables, poultry, and pork, plus game and fish.

DUE TO THE GREAT INCREASE in volume by evaporation, the rate of flow of a liquid through a tube or an orifice under a pressure difference of some atmospheres is decreased substantially if the liquid nears its boiling point. According to a paper presented by a German scientist before the Eighth International Congress of Refrigeration in London, this fact enables the simple capillary tube, replacing an automatic expansion valve in small refrigerating machines, to adapt the cooling effect to the load of the refrigerator. For this purpose, the liquid refrigerant coming from the condenser is cooled in a heat exchanger with the help of a refrigerant supplied from the evaporator and boiling at lower temperature.

THE "PILOT" HOME of a new residential community development involving 75 homes, all equipped with year-around air conditioning, has been opened for public inspection. Located at New Rochelle, N.Y., the project is scheduled to be completed early in 1953. Homes will be priced from $40,000 up. Both cooling and heating are provided by the same thermostatically controlled unit. Developers of Heathcote Heights, as the project will be known, believe it to be not only the largest completely air conditioned community in the country, but also the first project in which an entire community has been planned for air conditioning in its original construction.

REBELLION OF DALLAS, TEX., against summer heat shifted into high gear this spring, with announcements by two major builders of the inclusion of year-around air conditioning in their residential construction plans. When 25,000 people turned out for the opening of a 210-home low cost housing project boasting summer cooling as well as winter heating, the builder of a similar 125-unit project nearby hastily wrote year-around air conditioning into his plans, too. Homes in the development already open sell for $12,500.

INTRODUCTION OF THE HEAT PUMP has created a demand for climatic data not generally available, according to George S. Smith, professor of electrical engineering at the University of Washington. Since the major portion of heat supplied by a heat pump is drawn either from the air or the outer layer of the earth's crust, he points out, the design of this type of equipment must depend upon temperatures and temperature changes at various seasons of the year. Professor Smith, who has spent considerable time compiling such data, believes that eventually the accumulation of information from various parts of the country will permit interpolation of design data sufficiently accurate for most engineers in solving heat pump design problems.

14 Sales Points for Selling Air

PROVE to your prospect that air conditioning will do these things for him, and you've made a sale:

1. Attract more customers to his store, in addition to holding present patronage.
2. Make shoppers linger longer and buy more profitable impulse items.
3. Increase the market's trading area, as customers will come farther to shop in a cool, comfortable market.
4. Keep perishable stock longer in displayable and saleable condition.
5. Increase efficiency and speed of personnel, and keep errors at a minimum.
6. Improve employee cheerfulness and reduce customer irritation, allowing shoppers to leave store in a better frame of mind.
7. Retain freshness of non-refrigerated bulk fruits and vegetables.

FOOD STORES— "No. 1 Market for Air Conditioning"

. . . that's the hard-headed analysis of one leading air conditioning distributor. And here are some facts and figures that lend considerable support to this optimistic but realistic appraisal.

"FOOD markets provide the best market for packaged air conditioners today." As simply as that, one Louisiana distributor of this type of equipment points up the tremendous potential for air conditioning in the food store field.

Ask any modern food store operator why he air conditioned his market, and he might give you any one of the 14 reasons listed on these pages—or a combination of several of them. Then again he might express his reason as directly as did the market owner in Youngstown, Ohio, who bluntly stated: "I like to shop in an air conditioned store, and I figured my customers must feel the same way."

But whatever the answers, they all add up to just one all-important thing—air conditioning means more business for the food store operator. In fact, one extensive survey conducted recently by a leading magazine in the food store field revealed that the air conditioned markets queried showed an average annual increase in volume of 30.9% following installation of the equipment.

Bear in mind that this is no isolated instance, but an *average* business increase of all air conditioned

Conditioning to Food Markets . . .

8 Decrease over-all operating costs of refrigeration equipment, eliminating sweating of glass and icing of coils.

9 Increase effectiveness of advertising by offering advantages of air conditioned shopping facilities.

10 Promote healthier foods by preventing foods from deteriorating and losing their body-building qualities as a result of improper storage temperatures.

11 Preserve furnishings and equipment by maintaining uniform atmospheric conditions.

12 Reduce need for cleaning and dusting of stock and fixtures by filtering all air.

13 Keep general interior clean longer, thus making it unnecessary to redecorate as often.

14 Give the market owner a definite advantage over his competition.

stores covered by the survey. No clearer proof could be offered that air conditioning pays off in dollars-and-cents for the food store operators who install it. What better sales argument could the air conditioning salesman want?

Yes, the air conditioned food store is here to stay. In the opening paragraph of this article, reference was made to "the tremendous potential for air conditioning in the food store field." Just how big is this potential?

Well, recently compiled statistics show that there are more than 600,000 establishments in the United States that retail food. These figures further show that relatively few of this total number have been air conditioned or even ventilated.

Food retailing establishments can be divided roughly into two basic categories—chain stores and independent outlets. Generally speaking, the more progressive chains have taken the lead in the matter of air conditioning, with the other chains and the independents climbing on the bandwagon after they had seen the beneficial results which air conditioning could achieve, and after they had begun to feel the pinch of competitive pressure from the air conditioned food stores in their respective neighborhoods.

For the first time last year grocery chains led all other type of chain store outlets in expenditures for air conditioning with a whopping total of $15 million, according to a survey published by Chain Store Age. This represented a spectacular increase of 50% over the $10 million spent for this purpose in 1950. Air conditioning expenditures by food chains in 1949 totaled a mere $3 million. So it's easy to see which way the wind blows.

Prior to 1949 the grocery chains spent relatively little for air conditioning. They are now making up for lost time. By the end of 1949 only 4% of chain groceries were air conditioned. The following year some 9% of the stores in operation were air conditioned. At the present time roughly 16% of the stores in the chain grocery field are enjoying the benefits of air conditioning.

That still leaves a whale of a lot of prospects for the merchandisers of air conditioning equipment to tackle.

The food chains spent a higher proportion of their construction dollar for air conditioning in 1951 than in the preceding year—8.8% against 7.2%. In 1951 air conditioning was installed in 26%, or slightly more than one out of four, of all new or remodeled chain food stores. This figure compares with 19% in 1950 and only 9% in 1949, a further indication of the strong trend to "air conditioning thinking" on the part of food chain operators.

So much for the chains. But don't think for a minute that the independents have been standing idly by, simply watching the chains in their pell-mell rush toward modernization of their facilities—including the installation of air conditioning. Quite the contrary.

In fact, the latest study of modernization plans among 63,000 members of the National Association of Retail Grocers reveals that independent grocers of all sizes plan to spend approximately $800 million this year in the greatest program of store modernization and expansion in their history. Air conditioning ranks high on the list of equipment to be purchased by these independent food store merchants.

Out of each 100 retailers participating in this study, 63 said they intend to purchase new store equipment to improve appearance and efficiency

Which type of equipment should be installed?

PACKAGED UNITS ▲

◀ DUCT SYSTEM

of their establishments. Some 18% of these have included air conditioning in their improvement plans for 1952.

So there's your market. The potential is there, the need is there, and (in many cases) the desire is there. Now it's up to you to sell the equipment!

There's no denying that, as the president of one midwest grocery chain states, "the benefits of air conditioning are difficult to isolate and measure, because they are so closely entwined with the beneficial effects produced by all factors involved in modernization and good operation." This same executive, however, goes on to state his faith in the value of air conditioning by declaring that "we are convinced that it is a present-day grocery merchandising necessity."

"From all that we can check and observe," he continues, "we are led to believe that the air conditioning we have installed to date has played an important part in selling by encouraging patronage and purchase, and that the morale factor involved has increased employee productivity.

"Difficult as it is to measure precisely the benefits of air conditioning, their cumulative effect over a period of years is bound to be considerable. The returns on air conditioning appear to be long-termed as well as immediate. This fact, it seems to us, will become increasingly important as competition for business grows ever more intense during the years ahead, and the beneficial effects of air conditioning begin to pyramid."

Cooling Pays Dividends

Confirming this opinion, the general manager of a west coast food chain testifies that: "Operating experience in the last couple of years has convinced us that air conditioning will pay just as high dividends in the grocery business as in any other line.

"The old idea that the shortness of a customer's stay in a grocery store makes her uninterested in the temperature of the store is a mistaken one. People appreciate comfort just as much when they are buying food as they do when buying clothing or any other commodity. Customers are definitely attracted to air conditioned stores. Furthermore, they will spend extra time in an air conditioned store, which often results in larger orders.

"So far we have air conditioned four of our stores. Other installations will follow as rapidly as practicable. In every instance, we have seen tangible benefits from air conditioning, in point of extra sales, favorable customer attitude, and employee contentment and productivity."

All this from practicing food store men who *buy* air conditioning equipment. What better sales ammunition could be developed for those of you who *sell* it?

But let's be more specific about the advantages of air conditioning for the food store, whether chain or independent. Let's refer again to that check list presented at the outset of this article, and examine these "reasons why" one by one.

Sales Point No. 1: There seems to be no longer any doubt that air conditioning of a food store not only will keep that store's customers coming back but also will attract new customers to the establishment. Experience has proved this time and time again.

Consider the testimony of the market operator in White Plains, N. Y., who, after installing air condition-

ing, declared enthusiastically: "This refrigerated air drew customers into the store with the pull of a juke box gathering bobby-soxers into an ice cream parlor."

Or, take the case of one New Orleans "super" whose owner reported: "An increase in traffic was noted the first day we turned the air conditioners on."

Sales Point No. 2: This same New Orleans market operator went on to say: "Besides the increase in traffic, we found that customers were so pleased with the air conditioning that they stayed longer and shopped around, buying more of the luxury items that bring higher profits."

Recent surveys reveal that almost 25% of grocery sales in all types of food markets result from "impulse buying". This percentage would be considerably higher in self-service type stores. It's a matter of simple arithmetic, then, to figure out that the longer a shopper stays in the store, the more she will be exposed to those carefully calculated impulse displays. Result—more sales and higher profits chalked up to air conditioning.

Sales Point No. 3: Modern transportation has made a vast difference in the food shopping habits of the average housewife. No longer does she simply go to the *nearest* grocery store. Now, with distance no barrier, she will travel to the food market she *prefers*. And more often than not, this will be the market which is air conditioned. Thus air conditioning actually can serve to increase a store's normal trading area.

Sales Point No. 4: By prolonging the period during while perishable merchandise can be kept in top-grade merchandising condition, air conditioning not only improves the appearance and sales appeal of such items as fresh produce, but also cuts down on spoilage and shrinkage. Even pre-packed produce items have been found to keep better and retain their crisp appeal of freshness longer in an air conditioned store.

Sales Point No. 5: It's practically axiomatic that comfortable workers are more accurate, more efficient workers. And air conditioning can do much to improve existing working conditions. One market which re-

Continued on page 95

Sure, air conditioning is needed in the front of the store...

TO KEEP SHOPPERS COMFORTABLE, EMPLOYEES EFFICIENT

...but don't forget that it's important in back, too!

TO INCREASE STORAGE LIFE OF ALL DRY PRODUCE

TO INSURE SANITARY, FOG-FREE PACKAGING OF MEATS

2

WHERE INSTITUTIONS USE AIR CONDITIONING ... the Needs Vary Widely

INSTITUTIONS of all types provide a vast and varied market for air conditioning equipment, all the way from the fractional-ton window coolers used to condition individual rooms to huge central station systems ranging in hundreds of tons capacity for handling large areas or entire establishments.

Of all institutional applications, however, three general categories stand out as offering the greatest opportunities for air conditioning sales. These three top markets are (not necessarily in order of their importance) hotels, hospitals, and banks. For the sake of simplicity, let's discuss them in that order.

HOTELS

Air conditioning in hotels has virtually reached the "must" stage so far as public rooms are concerned, and there is a steadily increasing trend to the use of self-contained units for guest rooms.

A recent survey of 218 hotels in cities of 50,000 population showed that 82% had air conditioned coffee shops, 77% air conditioned main dining rooms, 75% cocktail lounges, and 61% private dining rooms. Some 53% reported that air conditioning had increased restaurant patronage, the average increase being about 25%. Of the hotels queried, 49% reported a much greater demand for air conditioned sleeping rooms in summer months, even when an extra charge was made for such rooms.

Particularly in the larger hotels, much of the equipment being installed is of the central station type, requiring careful zoning to meet the cooling and ventilation requirements of the individual areas served. More and more packaged units, however, are being sold to hotels for the conditioning of individual guest rooms.

Many small and medium size hotels are utilizing the larger "packages" as a means of providing a comfortable atmosphere in restaurants, cocktail lounges, bars, and similar public rooms.

Self-contained units have one definite advantage in that they allow the hotel to adopt a progressive plan of air conditioning, with the public rooms being handled first and guest rooms later. Or, only a few guest rooms can be equipped as a starter, with more rooms being air conditioned as the demand for them requires it.

Air conditioning can also prove to be a big advantage in some of the hotel's service areas. One Texas hotel, for instance, has installed a 25-ton air conditioning system in its institutional plant to eliminate a serious personnel problem. With skilled laundry machine workers difficult to find, it is necessary to extend every possible comfort to keep them on the job, the hotel management found.

High humidities combined with high temperatures to constitute one of the prime causes of resignations on the part of laundry personnel. During one hot week last summer three employees fainted and their services were lost to the hotel at a time when flatwork and guest laundry demand was at a critical peak. The problem reached major proportions when at least one third of the employees on duty during August had to be replaced.

One of the pressures being exerted against hotel keepers to air condition at least a part of their guest rooms is the fact that more and more motels, tourist courts, and trailer parks are offering air conditioned facilities to the summer traveler.

Packaged units, of course, have proven the ideal answer for the great majority of such institutions. In fact, the experience of operators reveals that air conditioning is proving to be one of the biggest business builders in the growing motel trade.

Operating figures compiled by hotel management groups indicate definitely that air conditioning is a sure-fire way of increasing revenue.

Installed in guest rooms it increases the average occupancy of the rooms. Furthermore, it makes possible the renting of such rooms at an increased rate. It also makes possible the rental at regular rates of rooms generally considered undesirable because of noise, closeness to the street, windows opening on courts

HOTELS

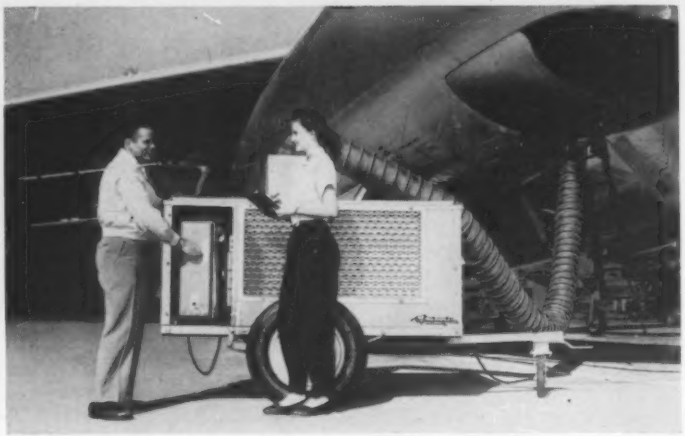
1. To increase average occupancy of rooms.
2. To make undesirable rooms desirable at regular rates.
3. To increase room revenue by making possible premium charges for air conditioned rooms.
4. To increase revenue in other departments, as guests utilize hotel facilities to avoid out-of-doors discomforts.
5. To increase grade of hotel service, enabling the hotel to meet the competition of other air conditioned establishments.
6. To decrease maintenance expenses.
7. To build customer goodwill and repeat business.

HOSPITALS

1. To promote sickbed comfort and more rapid convalescence.
2. To alleviate certain allergy conditions, such as hay fever and pollen aggravated disorders.
3. To reduce chance for infection.
4. To minimize drafts, dirt, noise, and odors.
5. To improve employee efficiency and health.
6. To lower maintenance and operating expenses.
7. To provide required atmospheric conditions in many specialized areas.

BANKS

1. To increase business volume by providing comfortable surroundings for customers.
2. To reduce employee errors and stimulate a cheerful attitude toward customers.
3. To promote maximum efficiency and clear thinking on the part of executive personnel.
4. To reduce absenteeism and lost time rsulting from employee illness.
5. To preserve furnishings and equipment.
6. To minimize cleaning and redecorating costs.
7. To build an invaluable reserve of customer goodwill.



This mobile cooler was specially developed to make more bearable the working conditions of the final assembly and test personnel working on the new Stratojet B-47 bombers at Boeing Airplane Co.'s Wichita, Kansas, plant.

Mobile Cooler Aids Aircraft Production

IT'S A SERIOUS problem when it gets too hot to work, doubly serious when the unbearable heat breaks down human resistance and delays important defense production. That's the situation the Wichita Division of Boeing Airplane Co. faced during last summer's heat wave.

The need was for an air conditioner mounted on a trailer that could be moved about the out-of-doors ramp where Boeing employees completed the assembly and made modifications on the new "Stratojet" bombers under a broiling sun.

Technical personnel doing final assembly work on the B-47s located on the ramp could not work because the heat of the sun created a temperature within the plane exceeding 130 F.

Engineering test pilots clothed in warm flying suits were subject to discomfort and loss of efficiency during the time required to warm up and adjust their jet engines and instruments, due to the intense heat of the sun entering through the plexi-glass canopy.

Called in on the project by the local Graybar refrigeration sales engineer, the Air Conditioning Division of Remington Corp. designed and developed a mobile air conditioner (designated as the 36T) and had the first of 12 units on its way to Wichita inside of five weeks from the time the order was received. The 36T is an electrically driven, self-contained air conditioner mounted on a standard 4′ x 6′ two-wheel ¾-ton trailer chassis. Under normal conditions the unit has a cooling power of 39,000 Btu/hr.

Remington officials say that although the mobile cooler was designed and developed for cooling grounded aircraft, it also has possibilities as a cooler for mobile bombsight repair shops, trailer mounted radar stations, mobile telephone exchanges, mobile operating rooms and hospitals for the army. Many industrial applications where large capacity mobile air conditioning is desired are anticipated as well.

The mobile cooler was the second of two projects of military importance designed and developed by Remington under the supervision of Ralph W. Ackart, chief engineer, simultaneously with production of the company's standard line of equipment. The other was a cooling and ventilating unit developed for Link Aviation for pilot trainers.

or wells, or objectional exposure to the sun.

By increasing occupancy of guest rooms, air conditioning automatically increases the revenue of all the hotel's other departments, because the more guests a hotel has, the more food they are going to eat and the more additional services they are going to require.

Not only does air conditioning step up the hotel's revenue, but it also cuts down its maintenance expenses. Hotels must be kept attractive in appearance if they are to retain their customer patronage, and air conditioning can go a long way toward minimizing the frequency of cleaning and redecorating. We've talked a lot about the dollars-and-cents value of air conditioning to a hotel, and we've shown how it can increase revenue and decrease operating costs, but perhaps the most important function of hotel air conditioning is the building of good will on the part of its guests.

No hotel prospers long if the majority of its guests become simply "one timers." As in most other businesses, it's the building of repeat trade that determines how successful —and profitable—a hotel will be. Air conditioning can be effectively used to provide that extra incentive to keep guests coming back again and again.

HOSPITALS

Hospitals have many specialized uses for air conditioning equipment in addition to providing for the comfort of patients. It is a fact generally recognized by physicians that the more comfortable a patient can be made, the more rapid his recovery will be. It is for this reason that many hospitals now are providing air conditioning for at least some of their convalescing rooms.

In addition to this advantage of promoting sickbed comfort and reducing hospitalization time, air conditioning also offers hospitals these additional advantages: reducing the chance for infection; minimizing drafts, dirt, noise and odors; lowering upkeep expense; and improving employee efficiency.

There are many specific applications in which hospitals have found air conditioning to be of considerable benefit. A few of these are: operating rooms, recovery rooms, delivery and obstetrical rooms, normal baby

Continued on page 107

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You, too, will prefer Chase Copper Refrigerator Service Tube—from the first time you use it! You'll find it easy to work because it's soft . . . easy to bend because of its uniform temper. Controlled annealing means tube that is clean, bright, oxide-free.

The new Chase end seal keeps it clean and dry inside. Made in ⅛" to ¾" diameters and standard 50′ lengths.

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3

Whether it's window coolers, floor-type units, or central station systems...

WINDOW COOLERS
are ideal for executive offices or other relatively small areas where individual room control is desirable

FLOOR MODELS
can be effectively used singly or in combination for the conditioning of general offices or similar large areas

CENTRAL STATION
systems are especially applicable where entire buildings or complete floors are to be air conditioned

AIR CONDITIONING BUILDS

OFFICE RENTALS 6 WAYS

THE hundreds of thousands of offices and office buildings all over the country represent one of the major unexploited markets for air conditioning equipment today, and this despite the increased amount of air conditioning installations which have been made since the war in this general field.

The plain fact is that, until comparatively recently, there has been little concerted effort on the part of industry sales organizations to do anything about this very important segment of the air conditioning market, regardless of the rosy potential sales picture that it presented.

As of now, there are no reliable statistics in existence on the potential market for air conditioning equipment in the office and office building field. If you want estimates, you can almost take your choice—one national organization says there *may be* 12% of the present office space equipped with air conditioning; another estimates the air conditioned space at 8%; and another figures that the air conditioned office space in the country at present might reach as high as 18%.

Patently, all of those figures as to the so-called "saturation" of the office and office building market for air conditioning equipment are estimates only—they are based on what the individual organizations who made them *believe* the market potential should be. Nobody has any figures on the potential market that they are willing to say are approximately accurate.

On one factor, however, there is practically universal agreement; there *is* a vast potential market for air conditioning in this field, and there *is* a method of approaching this field in terms of the *dollars-and-cents value* of air conditioning, rather than from the *comfort* side alone.

From the standpoint of the office building operator, the advantages of air conditioning from an economic standpoint include:

1. *It helps to hold present tenants.*

Air conditioning helps to hold tenants by providing them with cool, comfortable surroundings. The investment that the building owner or management has in its property demands the "occupancy insurance" that is provided by installation of air conditioning.

2. *It attracts new tenants.*

Tenants seek locations in which air conditioning is installed. Surveys among office building managers whose premises have air conditioning have shown that they have experienced little or no difficulty in keeping their office space filled. This is true when other and less costly office space is available in other buildings that are not air conditioned.

3. *It increases building income.*

Air conditioning enables the building management to obtain a higher per-square-foot rental for

Professional Offices Need It, Too

NOT EVEN AIR CONDITIONING can turn a trip to the dentist's office into one of life's greater joys, but more and more professional men are realizing that air conditioning can go a long way toward improving their customer relations and building their business volume.

Formula for Estimating Increased Profits Due to Increased Rentals

Income before installing air conditioning $\$$_____

Income after installing air conditioning:

_____ sq. ft. rentable area x _____% occupancy x _____ sq. ft. rental value = $\$$_____

Increase in revenue = $\$$_____

Subtract annual owning and operating costs of air conditioning $\$$_____

Additional annual revenue $\$$_____

Plus the value of air conditioning in advertising a truly modern building

Plus reduced cleaning and redecorating costs

Formula for Estimating Increased Profits Due to Increased Employee Efficiency

The increase in efficiency required to pay the annual owning and operating costs is .....%

$$\frac{\text{annual owning and operating costs}}{\text{total annual payroll}} \times 100 = ...\%$$

This amounts to a saving of only _____ **minutes per day per employee**

8 hours x 60 minutes x .....% **increase in efficiency** = ... **min. per day**

Plus reduced absenteeism

available space than is possible without this service. Building managers have reported that they are able to get from $1.00 to $1.50 more per square foot for air conditioned office space.

Additional evidence that air conditioning pays off in dollars and cents was obtained in a survey made recently by a midwestern power company. This survey showed that income from air conditioned office space increased an average of 15% annually over what it had previously been.

4. *It reduces cleaning costs.*

Air conditioning keeps interiors lighter, more attractive, since all air is filtered, cleaned and humidified. Decorations, displays, walls and ceilings stay cleaner and brighter, and cost less to maintain.

Cleaning is an important factor in building mantenance costs. Air conditioning reduces this cost by at least one-half. If you can get the figures on how much it costs each year to clean and redecorate the offices—including the dry-cleaning of curtains and draperies—you can show a real story of savings from this standpoint alone.

5. *It offsets building locations.*

Buildings that are located disadvantageously find that, with air conditioning, they are able to compete successfully with any office building or location in the community. Air conditioning gives them definite advantages over locations that may be considered to be better, but that are not air conditioned.

6. *It is good advertising.*

Air conditioning in offices is good advertising for the management. Ten-

ants talk about it; visitors notice and are impressed by it. It is the mark of a modern building and a progressive management.

Virtually all new office buildings constructed since the war have included air conditioning as an integral part of their construction, which is rather convincing evidence that it has a definite economic advantage. However, in the case of older office buildings, the matter or air conditioning often is left up to the individual tenants.

Stress Employee Efficiency

In selling equipment to individual office prospects, the main point to stress is increased employee efficiency. Nobody questions the fact that an air conditioned office is a more pleasant place in which to work. In hot weather, employees will be absent from their jobs less often, simply because they know that they will be more comfortable at work than they would be at home. Reduced absenteeism is one of the major advantages that employers attribute to air conditioning.

While at work, employees accomplish more when they are in an air conditioned atmosphere. Less time is spent away from their desks. They feel better, they do not become fatigued so quickly, and consequently they do more work, and of higher quality.

Testimonials Will Help

A table elsewhere in this article gives a formula that salesmen can use to show prospects how air conditioning can pay its way by increasing employee efficiency. Statements from owners in your own territory on the advantages of air conditioning in this respect are one of the most effective sales tools you can have. Most satisfied users are willing to furnish a statement of this type, if the salesman thinks to ask them for it.

Additional proof of the dollars-and-cents value of air conditioning is the fact that F. H. Peavey Grain Co., of Minneapolis, put one installation to the test, and followed with an order for 14 packaged units for application in its own offices and those of its subsidiaries: King Midas Flour Co., Van Dusen Harrington, and Peavey Lumber Co. All these offices are located in the Grain Exchange Building in Minneapolis.

$10,000 A YEAR increase in revenue was made possible in an Akron, Ohio, office building when these packaged air conditioners were installed to make basement areas usable for the building's maintenance shops.

Basement Installation Proves

A GOOD INVESTMENT

AN air conditioning system that makes possible an increase of $10,000 annually in building revenue can truly be termed a good investment.

By installing air conditioning equipment in space that had formerly been occupied by part of an Akron, Ohio, office building's obsolete heating plant, it was possible to move all of the maintenance service departments from second and third floor locations and consolidate them in one area in the basement.

This arrangement freed some 3000 sq. ft. of rentable space on the building's upper floors, enabling 27 additional tenants to be housed, and resulting in a gain of approximately $10,000 per year in rental revenue.

Removal of work rooms to the basement also improved general rental conditions of the building's upper floors by removing the odors and dust which formerly came from such work areas as paint and carpentry shops. Maintenance employees, more comfortable in their new quarters than they were before, now work much more efficiently and take fewer "time-outs". Both their morale and their productiveness have been greatly improved.

Originally the company had bought a number of units to determine whether the benefits of air conditioning could produce actual profits in terms of increased efficiency and reduced absenteeism and employee turnover. The order for 14 units was the result of their investigation.

Doctors' and dentists' offices are two types of offices in which the economic advantages of air conditioning can be demonstrated more readily. In a survey made recently, an average annual increase in volume of 24% was reported following installation of air conditioning equipment.

In selling to doctors and dentists, a principal point to make is the increased comfort of their patients. Usually, persons who visit these offices are under more or less of an emotional strain, and this fact makes

Continued on page 84

12 GOOD REASONS WHY

eating and drinking places should be air conditioned

1. *Increases Volume*
   a. Increases patronage
   b. Increases average check size

2. *Better Ventilation*
   a. Eliminates food and body odors
   b. Eliminates smoke
   c. Removes excessive heat from steam tables, fry stations, etc.

3. *Eliminates Excessive Soilage of Walls and Fixtures*
   a. By filtering air
   b. By exhaling air over cooking appliances
   c. By allowing windows and doors to remain closed

4. *Eliminates Objectionable Drafts*
   a. From open windows and doors
   b. From ceiling and wall circulating fans
   c. By providing correct air motion

5. *Eliminates Unprofitable Areas*
   a. By making areas uniformly comfortable
   b. By eliminating other causes of profit loss

6. *Maintains Conditions for Attractive Serving*
   a. Keeps food crisp and clean

7. *Increases Employee Efficiency*
   a. Average increase 27%
   b. Decreases breakage and spoilage
   c. Savings in laundering of uniforms

8. *Reduces Employee Lost Time*
   a. From respiratory ailments, etc.

9. *Stimulates Good Will*
   a. From customers
   b. From employees

10. *Improves Unprofitable Business Locations*
    a. Pulls customers
    b. Adds advertising value

11. *Eliminates Objectionable Flies*
    a. Doors and windows remain closed
    b. Food odors and heat are removed

12. *Eliminates Clogging Salt Shakers and Lumpy Sugar*

From the corner

COMFORT

STATISTICS show that there are more than a million commercial eating establishments in the United States today. And it's a safe bet that if you canvassed the owners of all of them you'd find but a small fraction who'd give you any argument whatever on the advantages of air conditioning for their type of business.

The importance of air conditioning has been too well established by the thousands of restaurants which have installed it. The competitive edge which air conditioning has given these establishments is all too well known to the proprietors of those eating places which still do not enjoy its benefits.

So in the restaurant air conditioning field, generally speaking, it's not so necessary to sell the need for air conditioning. It's primarily a problem of showing the restaurant owner how air conditioning can be made to fit, not only into his premises but into his pocketbook.

Experts in restaurant management estimate that only about 50% of the customer expenditure in the modern eating places goes for food. The other 50% is for the "other appetites" the customer brings in, including his preference for a certain restaurant's preparation methods, its service, and its atmosphere—including, of course, the large item of customer comfort.

In a recent survey of air conditioned eating places made by one of the leading restaurant publications, it was found that air conditioning brings an increase in the total annual revenue ranging from 15% to more than 80%, with the average increase being 36%. This means that not only do present patrons come back oftener,

lunch counter to the biggest dining room

PAYS OFF IN RESTAURANTS

but that many new patrons are brought in as well.

With air conditioning, the average increase in volume for July and August was shown to be 20% after air conditioning. There was an increase in the average check in the summer months of 53% in air conditioned places.

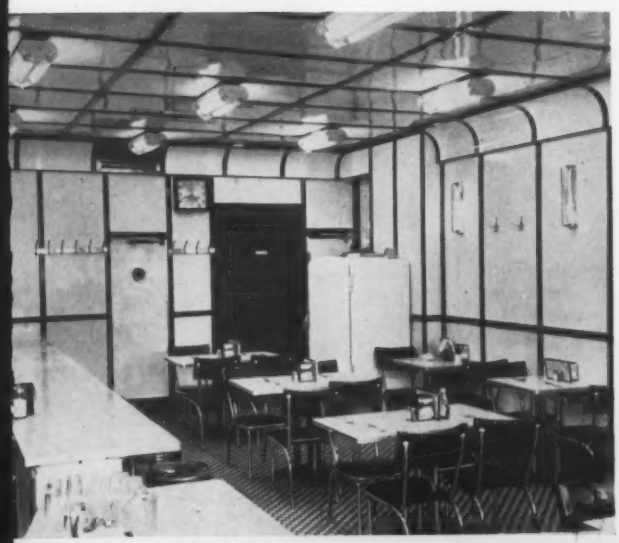
In addition to these benefits resulting directly from increased customer comfort, a surprising number of operational benefits also were revealed by this survey. Savings in the laundering of uniforms were reported as about 15%, for instance, as uniforms soil less easily in an air conditioned establishment and need to be laundered less often. A decrease of 15% was shown in breakage of china and glassware, due to less discomfort and nervous tension on the part of employees, who as a result handle the dishes with greater care.

These are all general figures, to be sure. They represent the average of all the restaurants surveyed. But this average is based upon thousands of individual case histories and experience reports like that of the owner of a busy Bronx restaurant located right next to a subway station.

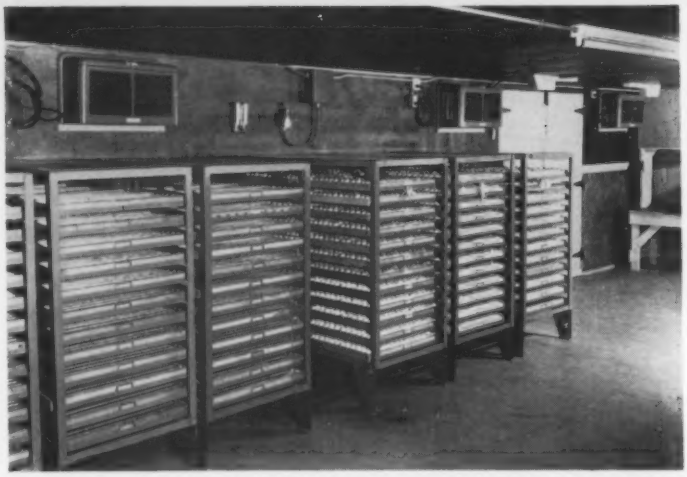
Cititng his own personal experience with air conditioning, this veteran of the restaurant business said: "July and August used to be my worst months, and now they are unquestionably my best. Before we installed air conditioning, 70% of the meals served here during the summer were salads and cold dishes. Now 80% of my summer business is in the higher-priced hot dishes.

"I see the advantages of air conditioning all around me," he con-

A PACKAGED UNIT recessed in the porcelain wall paneling provides just as many of the benefits of air conditioning to this corner lunch counter as . . .



A CENTRAL STATION SYSTEM does to this large dining room. Equipment for each establishment should be carefully tailored to its individual requirements.



These window coolers, combined in a through-the-wall installation in this California hatchery, improve egg quality and quicken chicken growth, without sacrificing storage room needed for the egg racks.

Air Conditioned Eggs Bring Bigger Poultry Profits

CHICKEN AND EGG production, once merely the source of pin money for the farmer's wife, is becoming big business thanks to man-made weather.

With proper temperature control, one man can raise as many as 160,000 chickens in one year without investing heavily in expensive incubator equipment. By holding newly laid eggs at a temperature of 55 F and about 80% relative humidity, they can be held until a busy incubator is ready to start the hatching process. According to reports made to the Mitchell Mfg. Co. by hatchery operators, hatchability of the eggs is raised between 10 and 20%.

After hatching, carefully balanced climate conditions controlled by air conditioners provide a healthy, rapid growth, allowing chickens to be killed and processed after only 12 weeks, it was reported.

High quality of infertile eggs for eating purposes is also assured by proper temperature control. By removing the animal heat immediately after laying, and holding the egg at a constant temperature of 55 F, the original "fresh laid" quality is maintained until it reaches the consumer. This also assures top price for the poultryman, according to the report.

A notable example of this type of air conditioner installation is that of the Sales and Burke hatchery in Riverside, Calif. A bank of Mitchell window-type air conditioners in "through-the-wall" installations keep the storage space at the proper temperature for both consumption and hatching. The thermostatically controlled units are mounted directly over large egg racks in a special insulated room assuring a constant temperature and climate control. The installation was made by D. L. Kissell Refrigeration Co. of Inglewood, Calif., which specializes in this type of installation.

E. A. Tracey, vice president in charge of Mitchell's Air Conditioning Division, says that other poultry men are reporting similar installations and results.

tinues. "For example, the place stays so much cleaner. Grease and smoke used to accumulate on the porcelain walls, but now most of it is trapped by the filters. We used to find dust and dirt on plates that had been set out only a few minutes. Air conditioning now allows us to set up for a rush considerably earlier than before.

Cuts Refrigeration Costs

"Air conditioning also cust down on the cost of my refrigeration. I don't have to defrost my fruit cooler so often, and the bain marie and the freezer cycle much less often.

"Then there's the matter of summer tempers—I don't have half the aggravation from customers, or from my own employees, that I had before air conditioning the place.

"Our kitchen was a sore spot before the air conditioning was installed. With no windows, kitchen employees had to suffer the already hot air from the restaurant, drawn in by an exhaust fan in the rear of the kitchen. Now the same fan draws in the cool air from the air conditioned dining area, and the kitchen temperature is at least 15% cooler, even in midsummer."

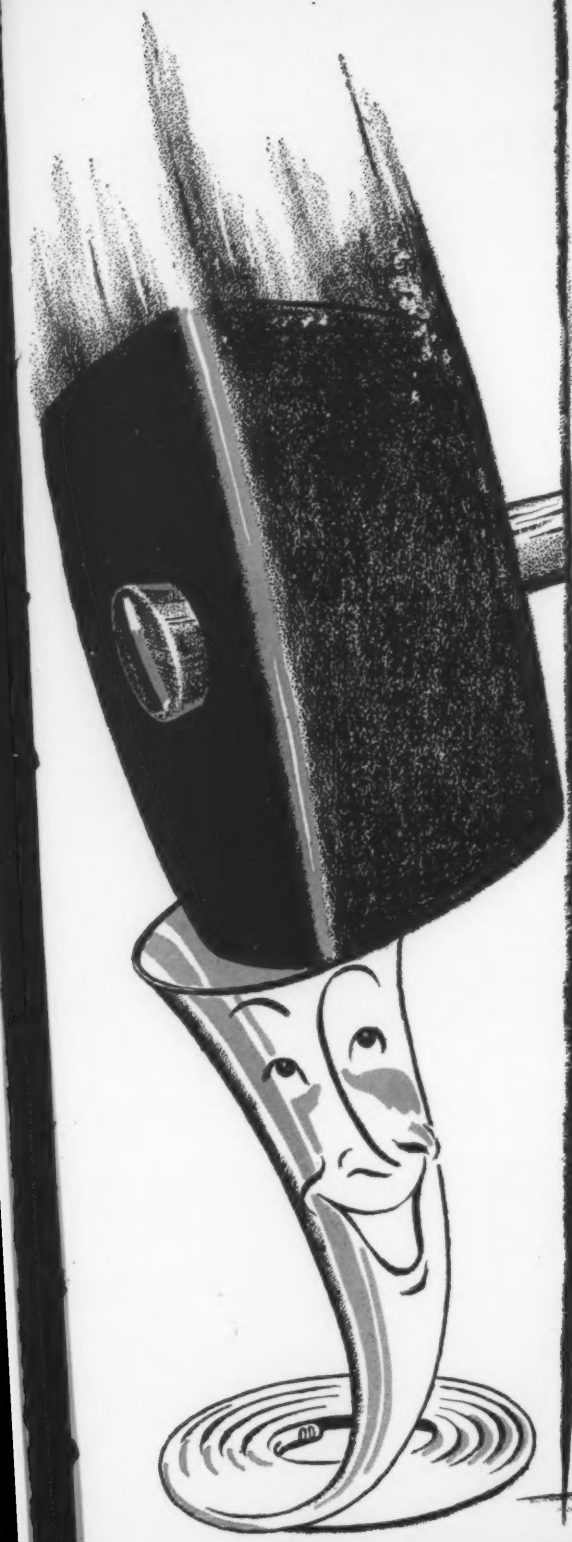
Testimonials Pay Off

Testimonials like this are easy to get from your own customers, most of whom you will find to be enthusiastic about the benefits which they themselves have experienced from their air conditioning. And you can't get any better sales ammunition to fire at those restaurant owners who haven't yet "seen the light". The experiences of a similar establishment in the next block carry a lot more weight with any prospect than those of an unknown restaurant a thousand miles away.

Earlier in this article it was pointed out that the primary job of the air conditioning salesman was not to sell the general advantages of air conditioning, most of which already are recognized by the prospect, but instead to show the restaurant owner how air conditioning can be made to fit into his premises and his pocketbook.

As more and more of the larger and more prosperous restaurants become air conditioned, it becomes increasingly important for the air con-

Continued on page 84



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5

HOW AIR CONDITIONING BUILDS RETAIL SALES VOLUME

IN THE specialty store field—and in this general category can be included women's dress shops, men's apparel stores, shoe stores, jewelry stores, camera supply shops, and all the types of specialty shops that dot Main Street—air conditioning is no longer a luxury item. It is an economic and competitive necessity.

Air conditioning, to stores in this field, is almost as necessary as adequate lighting. This is evidenced by the fact that very few such stores that have been constructed or remodeled in the past few years have not included either summer or year-around air conditioning.

However, there are thousands of existing stores which do not have air conditioning, and these represent a tremendous potential market.

According to a survey of air conditioning installations for 1951 completed recently by *Chain Store Age*, apparel, variety-general merchandise, and shoe chains spent a total of $16,000,000 for air conditioning equipment last year, as compared to $16,700,000 in 1950 and $15,500,000 in 1949. On the basis of this survey, the magazine estimates that 59% of the chain apparel stores, 60% of the chain shoe stores, and 31% of the chain variety and general merchandise stores in the country were air conditioned as of the end of 1951, each of these categories showing an increase of about 4% over the totals for 1950.

The survey estimates that, of the total number of chain stores constructed and modernized last year, air conditioning was installed in 45% of the variety and general merchandise stores, and in 43% of the apparel and shoe stores. Undoubtedly, construction and modernization plans were affected by government restrictions, so that the number of installations was considerably lower than it would have been had construction limitations been less servere.

The figures for chain stores, undoubtedly, are considerably higher

ANNUAL SALES INCREASES of 15% were experienced by women's apparel shops following the installation of air conditioning equipment, according to recent surveys completed by publications in the retail clothing field. Typical applications of both packaged and central station air conditioning systems to such shops are pictured below.

than for the general run of stores in this category. Particularly in the smaller cities, the air conditioned specialty shop is a rarity—and while breaking into this market represents no small problem, installation of the first system is likely to start a chain reaction that will result in a number of similar jobs within the next couple of years. One thing is certain—competitive problems are much the same in all sizes of communities.

Pioneering Pays Off

The first merchant to air condition his store steals a march on his competitors, gains a reputation of being the most progressive business man in his community, and brings more customers into his location. Many of these may come in the first time as "lookers," but the chances are they'll stay as "buyers." Most of the better stores in any size community, it is safe to say, eventually will adopt some measure of air conditioning—and those who realize the benefits of air conditioning as a business builder earliest will profit the most.

That air conditioning is responsible for a definite increase in sales volume has been proved by surveys recently made by leading publications in the clothing and apparel field.

Sales Start Climbing

These surveys show that, following installation of air conditioning equipment, department store sales showed an average annual increase in volume of 10%; the average annual sales volume in women's apparel stores increased by 15%; the sales in men's furnishings establishments gained an average of 10% annually after air conditioning was installed; and sales volume in shoe stores increase by approximately 8% annually following air conditioning.

These are average figures, and the actual experience figures of individual stores often show increases in volume considerably higher. Added to this are the advantages of air conditioning in reducing cleaning bills, cutting mark-downs and losses of merchandise caused by sweating and sweat stains; reducing illness and absenteeism among sales personnel, and increasing sales efficiency by keeping clerks more alert and courteous during hot weather.

Sales approaches for air conditioning in retail stores must, of course, be tailored to fit the individual location. Dealers who will go back at their present customers for experience figures on what air conditioning has meant to them in terms of dollars-and-cents advantages will find this information the most potent sales ammunition they can possibly use in lining up new business. The experience of a merchant "down the street" is always a more effective sales stimulant than random figures, however impressive these might sound.

Obtaining the annual gross volume of a particular business establishment for purposes of showing how air conditioning increases profits can often be done by applying the percentages which are given below. These percentages show the average relationship of payroll to gross volume of business.

It is frequently possible to secure locally the average wage in various lines of business. Where this figure can be secured, it is merely necessary to ascertain the number of employees,

Analysis of Air Conditioning Investment In Typical Specialty Shop

The following analysis, prepared by Typhoon Air Conditioning Co., Inc., illustrates how analyze a men's furnishings store's air conditioning investment to determine the percentage of return on the investment, assuming the total cost of the installation to be $2000. In this particular case, the store is assumed to be located in Jacksonville, Fla. Other types of stores and in other locations can be analyzed in the same manner by inserting their corresponding figures.

TOTAL COST OF AIR CONDITIONING INSTALLATION

OWNING AND OPERATING COST

Depreciation 10 years	$200.00
Interest on Investment 3% (Average for 10 years)	60.00
Maintenance	50.00

ELECTRIC AND WATER COST

For one continuous hours operation		
5½ KWH x local rate per KWH (3c Jax.)	.165	
7 GPM x 60 minutes x local water rate (11.5/1000 Gals. Jax.)	.048	
Total cost for one hours operation	.213	
Total cost for 1 hour x 10 hours per day x average usage per year (250 in Jax.)	532.50	
Divide by 2 to arrive at 50% average operating time (adjust to local conditions)		266.25
Total Owning and Operating Cost Per Year		576.25

ESTIMATE OF INCREASED NET PROFIT

Current average annual volume $100,000	
Increase after Air Conditioning 10%	$10,000
Net Profit increase after Air Conditioning 10%	1000.00
Annual Owning and Operating Cost of Air Conditioning	576.25
Net increase in profit	423.75

$423.75 represents 21% return on investment of $2000.00 for Air Conditioning.

Formula for Estimating Increased Profit

$$\frac{\$ \text{ annual owning and operating cost}}{\$ \text{ present annual gross business} \times \ldots\% \text{ gross margin}} \times 100 = \ldots\% \text{ sales increase necessary to offset cost of air conditioning}$$

How to figure Profit:

If the rent, light, heat and number of employees remain the same, then the gross margin on additional business minus the cost of air conditioning becomes net profit.

$$\ldots\ldots\% \text{ expected increase in business} \times \$\ldots\ldots\ldots \text{ present annual business} \times \ldots\% \text{ gross margin} = \$\ldots\ldots\ldots\ldots\ldots\ldots$$

Subtract annual owning and operating costs of air conditioning $\$\ldots\ldots\ldots\ldots\ldots\ldots$

Additional annual profit $\$\ldots\ldots\ldots\ldots\ldots\ldots$

calculate the total payroll, and apply the figures below to get the approximate gross volume.

Type Business	Payroll in Percentage of Gross Volume
Department Stores	6.4
Jewelry Stores	8.9
Men's Furnishings	6.2
Variety Stores	6.1
Women's Apparel	7.0
Shoe Stores	6.8

From the average retail store owner's viewpoint, air conditioning is a profit builder. It attracts new customers, holds old customers, and causes both groups to shop more leisurely. This means more on-the-spot selling and provides an overall sales pattern which permits the time-tested psychology of "demonstrating to sell." In addition, air conditioning often enhances an otherwise poor business location.

Statistics show that in retail establishments where air conditioning has been installed, salesmen are more alert and courteous, make fewer errors and spend far more time on the job because of the comfort factor. There is less tendency on the part of employees to quit their jobs, reducing the expense of perpetually hiring and training new sales people.

Expensive furnishings, demonstrations and appointments, necessary in this era of modern merchandising, last longer with air conditioning, and cleaning expense is considerably reduced. Clean, filtered air keeps out much of the dirt and other impurities which soil rugs, draperies, fixtures and other furnishings.

In women's specialty and men's apparel stores, for example, air conditioning results in personal comfort for both customer and employee, and in important monetary savings for the management by preventing perspiration damage to dresses, suits and other wearing apparel.

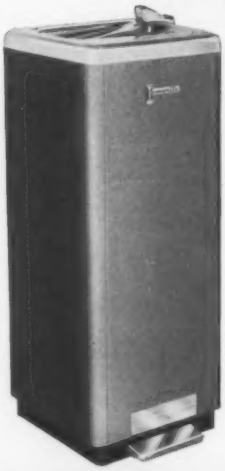
Particularly in the women's wear field, it is important that conditions be established for "drying out" the customer before she tries on a dress. Experience has shown that, if the selling area is maintained at about 76 F and 50% relative humidity, the time that the customer spends in picking out a dress provides a sufficient cooling-off period, before the

Continued on page 85

ANOTHER TYPE OF PROSPECT for air conditioning in the retail store field is the photographic supply shop, where proper control of atmospheric conditions can mean big savings by prolonging the storage life of film, printing paper, and processing chemicals.

DESIGNED FOR

DANGEROUS ATMOSPHERES



Following the recommendations of the National Electrical Code, Temprite has designed special Model PB-10WE Explosion-Proof Drinking Water Cooler for use with positive safety and security in potentially combustible atmospheres. These would include hospital-surgical atmospheres containing ether fumes; factories and petroleum refineries containing gasoline, petroleum, naphtha, alcohols, acetone, grain dust, natural gas or lacquer solvent; mines containing coal dust, etc. *Mail the handy coupon below for complete details.*

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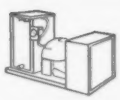
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Air Conditioning of Factory Work Areas Offers "Dollars-and-Sense" Return

Dollars spent for air conditioning of factory working areas make sense, both from the standpoint of higher volume, higher quality production and in the increased efficiency of plant workers resulting from comfortable surroundings. The figures given below are from a survey made several years ago by the Allison Division of General Motors Corp. These figures reflect the opinions of division heads, general foremen and foremen as to how air conditioning actually had benefitted the manufacture of their particular product, and their own (and their workers') reaction to air conditioning in respect to both production and individual employee efficiency. The percentages express the opinions of 634 supervisory members representing about 16,000 employees.

How, in your opinion does air conditioning affect:	None	Some	Much	Very Much
Employee Health	21.6%	55.6%	7.9%	8.0%
Employee Morale	14.7%	28.8%	26.3%	20.5%
Employee Efficiency (quality and quantity)	12.0%	20.5%	29.0%	30.2%
Job Satisfaction and Attraction	11.25%	29.4%	25.7%	25.9%
Reduction in Absenteeism	33.1%	36.7%	11.1%	9.8%
Reduction in Employee Turnover	30.0%	35.0%	8.9%	8.1%
Decrease in Amount of Building Maintenance Due to Cleaner Air	9.7%	25.9%	23.9%	19.8%

AIR CONDITIONING ....

VITAL INDUSTRIAL TOOL

ALTHOUGH the application of air conditioning to various types of industrial processes has undoubtedly been greatly stimulated by the nation's defense program, the fact remains that an uncounted number of potential applications still exist. And this despite the rather notable inroads that have been made on the industrial field during the past few years.

The industrial field is one in which the benefits of controlled temperatures and humidities enter directly into the production picture, and in which the economic advantages can be directly estimated in terms of operating profits. Any industrial plant will find use of air conditioning economically justified when the following conditions exist:

Close temperature control is required to maintain dimensional accuracy of gauges or materials being machined.

Excess temperature and humidity causes sweating and subsequent corrosion which results in high spoilage or rejects.

Air-borne dirt or dust entering fine mechanisms during assembly causes spoilage.

Excess heat or humidity impairs workers' health or efficiency causing a slump in output.

Moisture regain must be prevented in the storage of hygroscopic materials.

The importance of air conditioning in improving the health and efficiency of workers is one which is steadily gaining prominence, although it cannot as yet be said to be the prime factor in influencing the use of cooling equipment in the industrial field. However, competition for skilled workers is as keen, or keener, today than it has ever been. Industrial management realizes that it cannot afford, for production's sake, to let its skilled workers get away—it costs too much in terms of plant output to train new workers for the jobs that are given up.

Good Employment "Bait"

Faced with this problem, manufacturers are beginning to look for ways in which to make their employees more comfortable, happier in their jobs, so that they will have less inclination to seek employment elsewhere. Air conditioning, certainly, is a worthwhile investment from this standpoint.

With the present state of full employment, only an increase in worker productivity can increase output. Air conditioning can do the job, once the relation between worker productivity and atmospheric conditions is sufficiently appreciated.

To date, air conditioning has been developed chiefly for its effect on machinery and materials in industrial production. Any improvements in health and worker productivity have been incidental. The worker who is fatigued is less efficient, suffers mental and physical deterioration, is more receptive to infection, and more prone to accidents.

The human body can adjust itself to a wide range of atmospheric conditions, but often only at the expense of comfort and working efficiency. Studies have shown that this is true for all types of work, sedentary as well as manual, mental as well as physical.

In one case, for example, it was shown that although the accuracy of highly skilled men is not affected as much by high temperatures, they are the ones who deteriorate most in the amount of work put out. Also, the amount of deterioration goes up much faster as the temperature climbs.

With discomfort found to occur at 79 F when the relative humidity is 50%, or at 75 F when the humidity is as high as 75%, it can be seen that summer conditions in many parts of the United States require some mechanical means of bringing temperatures and humidities under control, if increased production through workers' efficiency is the goal.

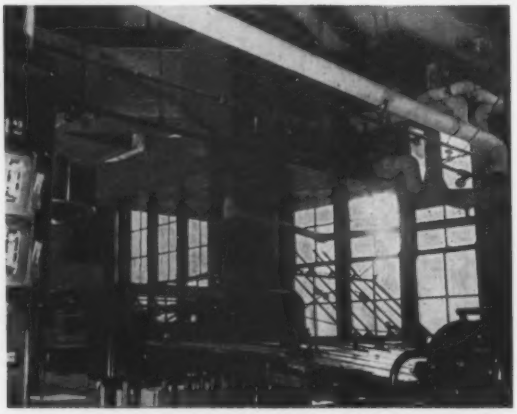
It is not surprising that in studies of industrial accident rates, peaks of high accidents are found to occur during hot summer months. These acci-

PRECISION PARTS PLANT uses air conditioning to closely control temperature and humidity in critical manufacturing and assembly areas.

FOUNDRY LABORATORY is the scene of many vital assays and analyses of materials and products in which controlled atmosphere is of the utmost importance.

Industrial Air Conditioning Does Many Jobs in Many Ways

CANDY MANUFACTURING is another industry in which air conditioning plays an essential role by keeping materials at proper working consistencies.



BOOK PUBLISHING firm employs air conditioning to prevent paper stock from shrinking or swelling and to promote drying of printing inks.

dent peaks are independent of production levels, and are related to accident proneness related to hot weather fatigue.

Fatigue affects industrial life—and production—in various ways: variations in plant output; sickness and absenteeism; labor turnover; lost time and spoiled work; plus the higher accident rate referred to above.

The value of air conditioning in increasing the production efficiency of industrial plants has long been recognized, although actual figures on the percentages of increase have not been too available. However, here are a couple of instances that show what air conditioning can accomplish:

Rejects Are Reduced

In a southern hosiery mill, since installation of air conditioning production of irregulars among service weight hosiery turned out, which ran between 10 and 15% prior to air conditioning, was cut to between 4 and 6% after the equipment was put in service. Among "evening sheer" hosiery, the most delicate type produced in the plant, rejects were reduced from 50% before air conditioning to between 10 and 15% afterwards.

In terms of production efficiency—referring to potential output of hosiery-making machinery as compared with actual output—the figure in relation to service weight hosiery increased from 90 to 95% after air conditioning was installed, and the production efficiency on "evening sheer" hosiery increased from 50% to 85%.

Another industrial plant, SKF Industries, Inc., has found that air conditioning in its two Philadelphia plants has been responsible in part for a reduction in rejects from all causes to as low as 3% of total production. Main causes for rejects in the plant were: (1) formation of rust on the bearing parts during the manufacturing process; (2) the presence of dirt and other foreign matter in the assembled bearings. In the summer months, the plant found, 1% of the rejects are due to rust spots caused by perspiration. This usually starts in the non-air-conditioned sections and is detected when the materials are inspected in the air conditioned zone.

Spelled out, the four minimum jobs done by air conditioning at SKF are:

1. Prevent stain-producing humidity from attacking finely finished bearing parts and assembled bearings during the critical assembly and final inspection period.

2. Help maintain accurate dimensional controls, which must not be affected by varying outdoor climatic conditions. A 10 F change in temperature can alter the millionth of an inch accuracy on ball surfaces. Air conditioning has effectively cut SKF's rejects by 20%.

3. Free factory atmosphere from lint and dust, dirt, vapors, and grinding grit which normally deposit on oiled surfaces of bearing races, balls and rollers. Before air conditioning was installed, SKF bearings carried a heavier coating of oil to protect them during handling; but the factory dust, lint, grit, etc. collected on the surfaces and threatened to cause destructive abrasions on the bearings. This made grading more difficult. Today, with air conditioning, grading is done by super-sensitive machines measuring within one twelve millionth of an inch. Accuracy and dependable operation of these instruments is also traced directly to air conditioning.

4. Prevent excessive summer heat from increasing workers' fatigue and lowering efficiency and morale.

Hot Operation is Cooled

In the new Fiberglas textile yarn plant in Anderson, S. C., is yet another example of how air conditioning is being applied to industrial processes. The manufacture of glass products is an exceedingly "hot" operation, with temperatures well above 2000 F usually employed. At Anderson the new Fiberglas yarn plant is air conditioned throughout production, service, shop and office areas. The system will maintain the uniform temperature and humidity conditions required for conformity with manufacturing specifications, as well as provide comfortable working conditions.

Cotton "classing" rooms are still another example of industrial usages to which air conditioning is now being put. In Memphis, Tenn., in the

Continued on page 89

SPRING MANUFACTURING plant's management found that employees worked better and that labor turnover dropped when air conditioning was installed.

FIBERGLAS PLANT employs air conditioning to assure maintenance of uniform product quality and to enable employees to work in high temperature areas.

NEWS OF THE INDUSTRY

RYAN INDUSTRIES BUYS "AMERICAN" CO.

S. C. Ryan, president of the Microtone Co., St. Paul, Minn., manufacturer of hearing aids and electronic equipment, has announced the purchase of the American Refrigeration Corp. of Hopkins, Minn., which firm will become a division of Ryan Industries.

Ryan has appointed Al Rose as president and general manager of the refrigeration division of Ryan Industries. Rose has resigned his Schaefer Corp. position as vice president in charge of sales. He has been associated in an executive capacity in the refrigeration industry for the past 25 years.

"It is our plan to continue to manufacture the present line, which includes domestic, farm and home freezers and commercial low temperature cabinets for ice cream and frozen foods," Rose said. "We are adding a new 19 foot upright home freezer, which will be known as the Ryan Freeze Pantry."

Ryan Industries have received orders and will process a government contract calling for the manufacture of land mine detectors. Plans are now being prepared to increase present space facilities of the Hopkins plant by 40,000 sq. ft.

REX-COLD EXPANDS SELLING PROGRAM

The facilities of the Rex-Cold Corp., 2247 Jackson Ave., Long Island City, N. Y., are now being expanded for the purpose of selling the company's complete commercial refrigerator line throughout the country, according to D. Jeffries, sales manager.

The Rex-Cold line consists of dairy cases, meat cases, freezers, beverage coolers and vegetable cases, both self-service and conventional types. The company previously had been selling on a direct retail basis within New York state.

KOCH SUPPLIES IN NEW OFFICES

General offices of Koch Supplies, manufacturer of machinery and equipment for the meat industry, have been moved to a new location, 2520 Holmes St., Kansas City 8, Mo.

The new quarters will be air conditioned and will afford space for research laboratories and a much larger engineering department.

3.9% INCREASE IN CONTROLS APPROVED

Manufacturers of commercial and domestic automatic temperature controls were recently granted an industry-wide price increase of 3.9% by the Office of Price Stabilization in Washington.

Special Regulation 25 to Ceiling Price Regulation 22 permits them to establish their ceiling prices by applying a uniform price adjustment factor of 3.9% to their General Ceiling Price Regulation ceiling prices. The regulation was effective April 7.

Products covered include:

Domestic and commercial automatic temperature controls for governing the transfer of heat to solids, liquids and gases and for air conditioning and refrigeration.

Automatic controls directly responsive to time, temperature, pressure, humidity, liquid level, or other physical condition.

Automatic controls for all household, farm, ranch, restaurant, and commercial appliances.

Automatic safety devices or automatic valves that are part of or used with a control.

Related devices designed primarily for use with the foregoing, but if electrical, not capable of controlling directly motors in excess of 1½ hp single phase or 2 hp polyphase.

Specially excluded from the regulation are refrigerator expansion valves and all manually operated valves.

MARLEY MOVES

The Marley Co., manufacturer of cooling towers, has moved its office headquarters to a new location, 222 West Gregory, Kansas City, Mo. The company formerly was located in Kansas City, Kans.

FOGEL FIELD HOLD ANNUAL MEETING AT FACTORY

FOGEL DISTRICT SALES MANAGERS pose with officials of the company during their recent annual sales conference in Philadelphia. Seated, left to right, are: J. E. Read, Richmond; V. P. Warren II, Atlanta; E. A. Terhune, vice president, sales; William Fogel; president; I. Fogel, secretary-treasurer; Walter Brown, Pittsburgh; Robert R. Slater, Seattle. Standing, left to right: Harry Bell, Boston; Lee Carter, export; Jos. Byrnes, manager, order department; Eddy Miller, Evansville, Ind.; Wm. Schmanke, chief engineer; Wm. Northsworthy, chief inspector; J. E. Oliphant, Marion, Ohio; Wm. Oliphant, Detroit; George T. Estfan, Wichita; Ken McGaw, Chicago; Jos. Hermann, Cincinnati; Robert Hortz, sales engineer, Philadelphia; Herman Walker, San Antonio; Paul Wasson, Cleveland.

* * *

Two new models of Fogel commercial refrigerators were introduced to district sales managers of the Fogel Refrigerator Co. at their recent annual sales conference at the factory in Philadelphia.

The new models were the "Angle-Vision" counter-top freezer and the "Vegmart" produce merchandiser. Several new designs were introduced to the district managers. A new self-service freezer with automatic defrost was displayed, and several models of mortuary coolers were presented.

William Fogel, president, opened the meeting with a welcome to the 16 field representatives. The two-day conference, arranged and conducted by E. A. Terhune, vice president in charge of sales, opened with a tour of the 4-acre factory and followed with an inspection of the complete Fogel line of 97 models.

The meeting covered all phases of operation, including product design, sales and service analysis, and general operating policies.

COOLING GETS INTO POLITICS

COOL HEADS should prevail at July's Republican and Democratic national conventions in Chicago's huge International Amphitheater since structure is getting an interior face-lifting for air conditioning. Workmen are shown here putting one of the four suspended-type air conditioning units into place. These units, together with the revamped existing duct system, will produce 290,000 cu. ft. of conditioned air per minute—enough to completely change the air five times an hour. Two Carrier centrifugal machines will furnish 1,000 tons of refrigeration, and will pump some 2,000 gallons of chilled water per minute to an array of cooling coils through which air for the 12,000-seat building will be passed. Thermostatic controls developed by Minneapolis-Honeywell will keep relative humidity at a constant 50% and maintain comfortable conditions even when outside temperatures crawl up to 95F. Air conditioning of the amphitheater is expected to cost about $300,000.

YOUNG, HEATON, DICE WIN AT PHILA. SHOW

Al Young of Stamford, Conn., walked off with top honors and a television set by writing, in the opinion of the judges, the best 25-word statement on which manufacturer's booth was the most educational at the 9th All-Industry Educational Conference held in Philadelphia last month. The contest was sponsored by the Refrigeration Equipment Wholesalers Association.

Owen Heaton of Philadelphia won second prize, consisting of an electric toaster, while Frank J. Dice of Perkiomenville, Pa., was awarded third place and a table model radio.

Alco Valve Co. was awarded a plaque for having the booth judged "most educational" by the majority of visitors voting in the contest. Mueller Brass Co. won the second place ribbon and Detroit Lubricator the third award ribbon on the basis of the balloting.

Judges in the contest were Lee Haas, eastern representative of Commercial Refrigeration and Air Conditioning, Phil B. Redeker, editorial director of Air Conditioning & Refrigeration News, and O. Rhodius Elofson, advertising director of Refrigeration Service and Contracting.

The Philadelphia Conference, while the ninth such program to be sponsored by the Refrigeration Equipment Manufacturers Association with the cooperation of other industry groups, is the first in the current series of four to be held prior to the All-Industry Exposition scheduled for Cleveland in 1953.

ASHVE MEETING IN N. J. JUNE 16-18

The American Society of Heating and Ventilating Engineers will hold its 1952 semi-annual meeting at Spring Lake, N. J., June 16-18, at the Essex and Sussex Hotel. Eleven papers will be presented at three morning technical sessions devoted to heat flow and heat transfer problems, including heat flow through glass, research in room air distribution; studies on physiological reactions to atmospheric environment; air filtering and air drying.

The New Jersey section of the New York chapter of the society will act as hosts for the meeting. F. H. Faust of Bloomfield is general chairman of the committee on arrangements.

WALK-IN UNIT SURVIVES TORNADO

THIS LINGLE WALK-IN COOLER served as an emergency storm cellar during the recent tornado in Arkansas. The debris you see strewn around the picture represents what was left of the Dairy Queen Store, in Bald Knob, Ark., after the tornado of March 21 had wreaked its havoc. Joe Henry, owner and operator of the store, told Lingle Refrigerator Co. officials that the storm struck without warning and that he and Mrs. Henry, their son, David, and Kenneth Davidson ran into the cooler for safety. The cooler was rolled over several times by the force of the wind, Mr. Henry reported, but other than a few bruises he and the other occupants of the cooler came through unhurt. Naturally, Mr. Henry's opinion of the structural soundness of the cooler has been greatly increased—although he hopes he'll never have to put it to such emergency use again, ever.

USAIRCO INCREASES WARRANTY BENEFITS

United States Air Conditioning Corp., Minneapolis, has announced that its five-year protection plan, which has been offered on usAirco packaged air conditioners for the past three years, has been augmented by more liberal labor allowances on repair work and payment of freight charges for replacement parts.

The plan applies to the ½ and ¾-ton window-type room air conditioners and 2, 3, 5, 7½ and 10-ton upright store-type conditioners, according to the announcement. The protection policy is included in the standard price of the equipment.

During the first year of the five-year policy, usAIRco guarantees the entire unit to be free from defect in material and workmanship. Should any part of the equipment, including the compressor, fail during the first year, it will be replaced free of charge, f. o. b. destination, i. e., with freight charges for the returned defective part and the replacement part paid for by the manufacturer. In addition, the company will pay scheduled charges to the dealer or distributor performing the repair service.

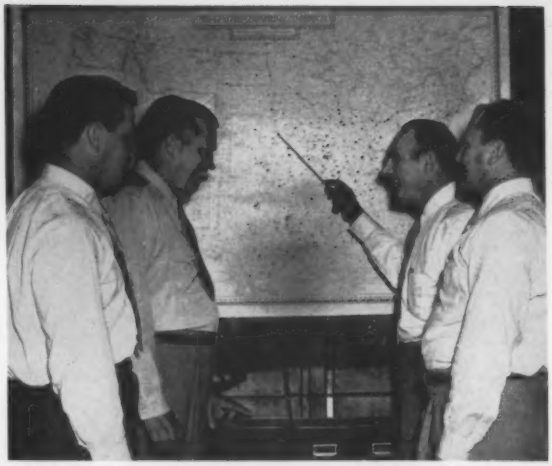
During the following four years of the policy, the company guarantees the motor-compressor unit or, in the case of the window unit, the refrigeration circuit to be free from defects. During this period, a new compressor or window unit chassis will be shipped to the dealer or distributor on a prepaid basis and the old one may be returned on a collect basis. In addition, the company will make payments ranging from $10 to $40 to meet labor expenses involved in changing these parts.

To facilitate the handling of replacement compressors under the five-year program, the company has made arrangements nationally for direct over-the-counter exchange with replacement parts distributors who stock the types of compressors used in usAIRco equipment.

MALONEY RETURNS TO ACME POSITION

Joseph T. Maloney, sales executive for Acme Industries, Inc., has resumed his position with the company following a six-months' tour of duty with the National Production Authority.

While with NPA, Maloney was industry analyst with the Air Conditioning and Refrigeration Section of the General Industrial Equipment Division, of which Gordon Wootton is chief.



POINTING OUT new territorial alignments in the Bevco Co.'s sales and distribution picture is Sam C. Dorman (second from right), the company's sales manager. With him, left to right, are Earl Wilkerson, southern sales representative; James W. McElroy, production manager; and Harold Rowton, western sales representative. Bevco now has a total of 12 models of coolers and venders that will be offered to its complete trade.

G-E DEALERS IN "CLEAN-UP" DRIVE

General Electric has announced a spring "Clean-Up" sales campaign to its dealers on home heating and cooling equipment. The campaign runs from April 15 through June 30.

Taking its cue from baseball, the campaign announcement urges dealers to be "clean-up" hitters and not bench warmers. It tells G-E dealers how to boost their "batting averages" by alert and aggressive selling.

A variety of advertising and sales promotion angles the dealers can use to advantage during the campaign are outlined in the announcement.

The large new home field and the huge replacement market have been set as the twin targets for automatic heating equipment sales during the campaign. Major emphasis in home cooling is being centered on G.E.'s new residential packaged air conditioner designed especially for use in small and medium-sized homes.

ROBERTS TO HEAD CANADIAN RSES

John Roberts, of Sidney, N. S., was elected president of the Interprovincial Association of the Refrigeration Service Engineer Society at the organization's 13th annual educational conference at the Mount Royal Hotel, Montreal, April 7 and 8.

Other officers elected are: Ken Wood, first vice president; E. W. Ridsill, second vice president; R. G. Henderson, secretary; G. A. Burns, treasurer, all of Toronto. Guy Forget, of Montreal, was named sergeant-at-arms.

New chairman of the board of directors is A. Gendron, of Montreal. Other new members of the board include W. J. Marshall, Toronto, education; K. C. Robinson, Ottawa; and M. Rudka, Oshawa, Ont.

NEW USAIRCO EXPORT DEPT.

Reorganization of its foreign sales facilities is reported by United States Air Conditioning Corp., which announces the establishment of a new export department at 13 East 40th St., New York City.

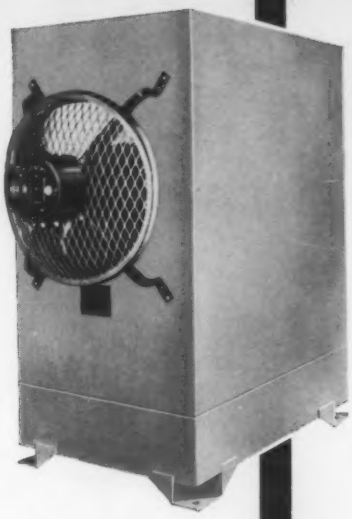
The new foreign sales division, under the direction of Arthur J. Rocke, export manager, will maintain branch offices in Mexico, Cuba, Costa Rica, Argentina, Brazil, Venezuela, England, France, Belgium and Italy. It will distribute the complete line of usAIRco air conditioning, refrigeration, heating and ventilating equipment.

Cooling Tower

by

KRAMER

SCIENTIFIC NEW FILL



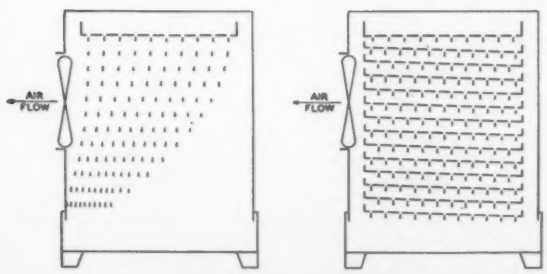
3 to 8 Ton

MORE CAPACITY

The redistributing decks keep the water uniformly suspended, providing maximum contact between air and water.

LONG LIFE

Casing and sump are heavy gauge steel, hot dipped galvanized after fabrication. Redistributing decks are metal and fireproof.



Conventional Fill Kramer Fill

EASY INSTALLATION

Unit is shipped assembled but can be knocked down to eliminate rigging costs. One fitting required for drain and over-flow.

WRITE NOW FOR
BULLETIN NO. R-225

KRAMER TRENTON CO. • Trenton 5, N.J.

Circle No. 40 on Reader Service Card for more information

USEFUL BULLETINS · BOOKLETS · CATALOGS

The publications listed below are available to readers without charge. Simply circle on the postcard in this issue the key numbers of the items you wish to receive. Your requests will be forwarded directly to the companies concerned.

FACTS AND FIGURES on a new low-temperature merchandiser for food store use are contained in a 4-page brochure published by Warren Co., Inc. The unit is pictured with a mirrored canopy and with a lighted canopy featured by panels of food illustrations, as well as by itself. One page is devoted entirely to mechanical specifications and dimensional diagrams.

Circle No. 111 on Reader Service Card

WANT TO LEARN how one large air conditioning contractor cut in half its emergency calls on equipment covered by maintenance contracts? Then send for literature on "Ace" condenser treatment blocks available from Atlantic Chemical & Equipment Co. Learn for yourself how this simple chemical treatment keeps head pressure down, reduces operating costs, and minimizes excessive wear by killing slime-algae and preventing corrosion and scale.

Circle No. 112 on Reader Service Card

"HOW TO CUT COSTS on Equipment Maintenance" is the heading of a brochure giving complete information on "Elec-Detec," the new electronic stethoscope for use by maintenance men in locating and diagnosing mechanical troubles by pinpointing the noise caused by such troubles. This brochure is available from Anco Instruments Div.

Circle No. 113 on Reader Service Card

GASKET INSTALLATION TIPS are included in the bulletin issued by Jarrow Products to publicize its new "Re-Seal" cushion replacement gasket. Construction and application details of this gasketing material also are shown.

Circle No. 114 on Reader Service Card

FLORIST DISPLAY CASES and upright freezers bearing the "Utility" trademark are illustrated and described in two new specification sheets issued by Utility Refrigerator Co. These catalog sheets bear a full page picture of the unit on one side and a complete listing of mechanical details and features on the other.

Circle No. 115 on Reader Service Card

THE COMPLETE LINE of "Hev-E-Oil" burners is described in an 8-page catalog issued by Cleaver-Brooks Co. Various sizes and capacities of burners are illustrated. Featured is the fact that these burners are designed to utilize heavier grades of fuel oil, with the result that they are applicable to both commercial and industrial applications. Fourteen features are listed and a complete table of specifications is included.

Circle No. 116 on Reader Service Card

(Turn to page 66 for more Useful Literature)

Get MORE BTU's Per Dollar...

with New Kelvinator Condensing Units!

A selection of 15 Kelvinator Open-Type models from ¼ H. P. to 5 H. P. is also available

COVERED BY KELVINATOR'S UNSURPASSED 5-YEAR WARRANTY!

Kelvinator Condensing Units can *make sales, build business,* and reduce inventory for you. Check Kelvinator's wide range of 16 hermetic models, up to and including ½ H. P. Each is precision-built and tested to rigid Kelvinator standards. Each is competitively priced—and performs at peak efficiency. Get and hold good business and good-will—sell Kelvinator on your next new or replacement installations. For complete information, call your nearest Distributor or Zone office. Kelvinator, Division of Nash-Kelvinator Corporation, Detroit 32, Mich.

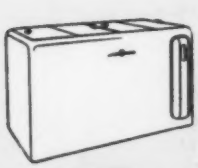
NOW

- More BTU's per dollar!
- Same unit for both medium and low temperature application (reduces inventory)!
- High in capacity—more compact, lighter in weight!
- Specially engineered for F-22!
- Kelvinator's exclusive, positive lubrication system!
- Traditional Kelvinator quality and performance—at lower prices!

Profit Today... Build for Tomorrow with

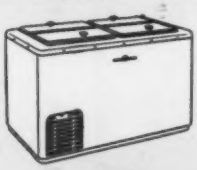
Kelvinator

The Name that Sells... The Name that Satisfies!


KELVINATOR BEVERAGE COOLERS


KELVINATOR FROZEN FOOD MERCHANDISERS


KELVINATOR WATER COOLERS


KELVINATOR ICE CREAM CABINETS


KELVINATOR OPEN TYPE CONDENSING UNITS (¼ H. P. to 5 H. P.)

Circle No. 42 on Reader Service Card for more information

(Useful Literature continued from page 64)

FUNDAMENTAL SUGGESTIONS for using calcium chloride brine and for strengthening the brine or preparing new brine are contained in a leaflet issued by the Calcium Chloride Institute. Also included is information on testing brine and a handy chart for estimating amounts of calcium chloride needed in strengthening brine.

Circle No. 117 on Reader Service Card

V-DRIVE SELECTIONS can be made quickly and accurately with the practical aid offered by Engineering Guide No. 50-A published by Fort Worth Steel & Machinery Co. Simple formulas for standard quarter-turn and V-flat drives are augmented by tables of drives in all belt sections which have been compiled for quick selection of drives of required ratio and speed. This bulletin also includes engineering information on other types of V-belt drives.

Circle No. 118 on Reader Service Card

HOW A FOUNTAIN FREEZER cut labor costs, speeded service, and boosted profits for one fountain lunch operator is told in detail in a little folder issued by Sweden Freezer Mfg. Co. and presenting a case history of the Mocha Shop. This folder gives actual facts and figures which combine to form a convincing sales story for fountain freezers.

Circle No. 119 on Reader Service Card

FEATURES AND SPECIFICATIONS of the line of standard and custom-built industrial freezers produced by Webber Appliance Co., Inc., are contained in this 4-page folder. Photos of the units are shown and a typical performance chart is reproduced. A list of users is accompanied by testimonial letters.

Circle No. 120 on Reader Service Card

A NEW MODEL (W-120-H) of the industrial chilling machine produced by Sub-Zero Products is covered by this new catalog sheet containing a complete description and specifications. This unit has been especially designed for small scale users of industrial chilling processes.

Circle No. 121 on Reader Service Card

ADVANTAGES OF BULK COOLING of milk are outlined in detail in a bulletin made available by Dairy Equipment Co. Sequence diagrams show how milk is relayed under hygienic conditions from cow to bulk cooler to truck tanker. Pictures of the units show how they can be converted from can to bulk cooling procedures.

Circle No. 122 on Reader Service Card

SMALL PUMP APPLICATIONS are the subject of a new type of reference chart prepared by Tuthill Pump Co. This guide lists in one convenient table the various types of Tuthill pumps, the services for which each is built, their performance characteristics, types of packing, styles of mounting, and other features.

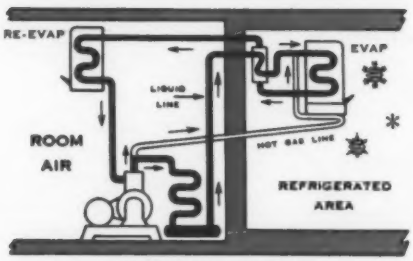
Circle No. 123 on Reader Service Card

FIVE IMPORTANT REASONS for the installation of an "Aircheck" valve on the discharge line of every air and gas compressor are outlined in this catalog sheet issued by Pennsylvania Pump & Compressor Co. Features of this line of check valves are detailed and a cross-sectional diagram is shown.

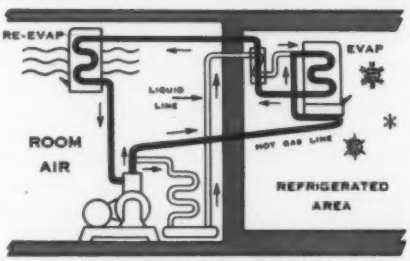
Circle No. 124 on Reader Service Card

Thermocycle installation for 0° frozen meat and vegetable room at Schaefer Stores' Empire Supermarket in Schenectady, N. Y. Plasti-coolers in meat boxes and cutting rooms, standard unit coolers in vegetable rooms, and 20 ton cooling tower, comprise other Bush equipment on the job.

ROOM AIR...TO DEFROST



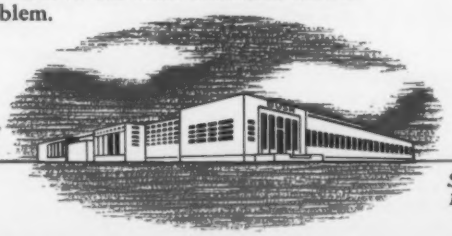
NORMAL CYCLE



DEFROST CYCLE

Warehouses, chain stores, markets . . . the Bush Therm-O-Cycle System of defrosting, used successfully in many C. V. Hill fixtures, has become the modern defrosting system for low temperature installations. Offering a complete "package" of evaporator, re-evaporator, heat interchanger, timer, solenoid valve and strainer, the Therm-O-Cycle system affords convenience of installation and servicing, and because of efficient frost removal, can be selected with a longer running time than many other low temperature systems. (18 to 20 hours.)
Dependable, automatic and trouble-free, you'll find it the most economic answer to your next low temperature defrosting problem.

Write Today for complete specifications



Bush Manufacturing Company

WEST HARTFORD 10, CONNECTICUT

Since 1907

Circle No. 45 on Reader Service Card for more information

NEW PRODUCTS

For further information on any of these products, simply circle on the postcard provided in this issue the key numbers of the items in which you are interested. Your requests will be forwarded directly to the companies concerned.

Flaked Ice Machines

Product: Four new "Scotsman Super-Flaker" automatic flaked ice machines.

Manufacturer: American Gas Machine Co., Albert Lea, Minn.

Features: Available in two capacities (350 to 430 lbs. daily, and 750 to 900 lbs. daily) and two types for continuous flow or completely automatic storage. Storage type unit

operates automatically to keep heavily insulated stainless steel storage bin full. Storage capacity equals 10 to 12 hours output. Operating costs average 20 cents per day for smaller unit and 35 cents per day for larger unit at full capacity. Exclusive patented freezing and flaking mechanism requires only one moving part under refrigeration. No complicated controls, nothing to get out of adjustment. Both models stand 40 inches high. Only one simple plumbing connection required. Can be plugged into any 110-115-volt a.c. electrical outlet. Flaked ice produced has no sharp edges, and special texture prevents it from packing down or matting together.

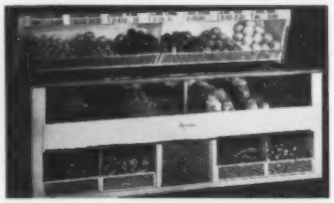
Circle No. 130 on Reader Service Card

Vegetable Display Case

Product: Self-service fresh vegetable display cabinet.

Manufacturer: Cunningham Products Co., Detroit, Mich.

Features: Combines large display area for fresh produce requiring refrigeration with ample bins for dry vegetables and fresh fruits. Cabinet measures 8 feet long and 35 inches deep. Welded steel construction with baked white enamel finish and anodized aluminum trim. Glass front extends full length of cabinet. Super-



structure equipped with latest style vegetable price tag moulding and two fluorescent lamps which flood display areas. Refrigerated display compartment 27 inches deep and 90 inches long, has five adjustable dividers to give a better display advantage. Displays can be built up to an approximate depth of 10 inches. Fronts of dry vegetable and fresh fruit bins are easily removed to permit proper cleaning. Powered by ½-hp Tecumseh condensing unit. Even flow of cold air from refrigerated coils covers all parts of display area. Insulated with fiber glass. Fully automatic defrosting provided daily by electric defrost system. All condensates flow freely through a drain provided in cabinet.

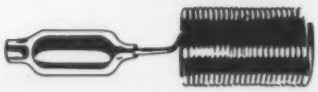
Circle No. 131 on Reader Service Card

Metering Device

Product: S-1 "Strain-O-Kap," a replacement metering device for all refrigeration systems from 1/20 to 1/3 hp inclusive.

Manufacturer: Wagner Tool & Supply Co., Long Island City, N. Y.

Features: Replaces low side floats, restrictors, original capillary tubes, and automatic expansion valves. Restrictor tube is hard tempered seamless tubing, precision drawn and individually tested for pressure drop. Strainer is hard drawn spun copper tube containing three monel screens graduated 60, 80, and 120 mesh. Scientifically designed not only to strain but also to break up the turbu-



lent, erratic flow of globules of oil that travel along with the refrigerant. This action results in a quiet, efficient supply of refrigerant and a pressure drop so desirable in capillary systems. Baked and individually packed in heat sealed, moisture proof containers.

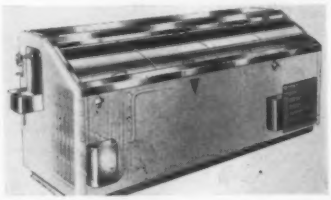
Circle No. 132 on Reader Service Card

Bottle-Water Cooler

Product: Bottle beverage cooler with water dispenser built into end.

Manufacturer: Ideal Cooler Corp., St. Louis, Mo.

Features: Available on all bottle beverage coolers is a water dispenser built on to the end. The 10-gallon



tank permits a draw of 15 gallons of properly chilled water. Tank fits compactly into cooler and reduces cooler capacity by only three cases. The 8-foot remote cooler with built-on water station holds 53 cases of 12-ounce bottles; the 6-foot remote cooler holds 39 cases. The 8-foot self-contained model with water station holds 42 cases; the 6-foot self-contained cooler holds 28 cases.

Circle No. 133 on Reader Service Card

Dry Bottle Box

Product: Model BB8S self contained dry bottle refrigerator.

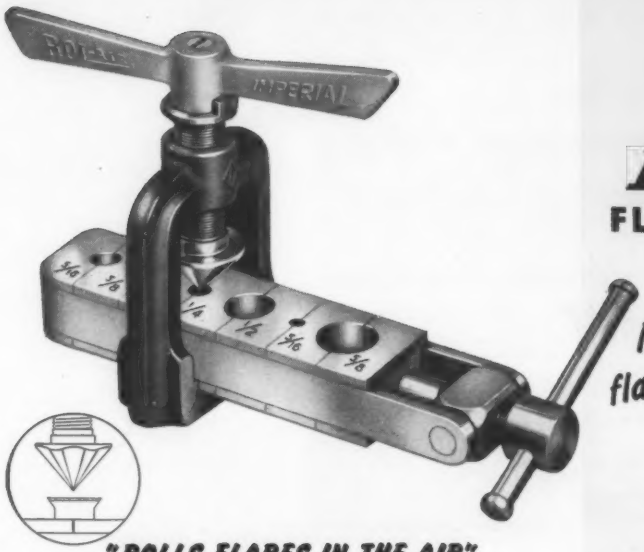
Manufacturer: Friedrich Refrigeration, Inc., San Antonio, Tex.

Features: "FloatingAir" principle of refrigeration maintains stored bottles in dry, clean, easy-to-handle condition, and keeps labels intact. Jet black porcelain case makes attractive appearance in any location. Porcelain

Automatic
BURNISHING ACTION!

AN EXCLUSIVE FEATURE OF

The NEW
IMPERIAL
ROL-AIR®
FLARING TOOL



Makes the finest flares we've ever seen

Automatically Burnishes Flares

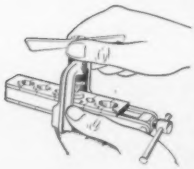
Tool has super smooth, multi-faced flaring cone with tool chrome finish. When backing off cone after flare is made, a lost-motion-mechanism automatically causes cone to burnish flare giving it a highly polished finish which assures tighter joints.

"ROLLS FLARES IN THE AIR"

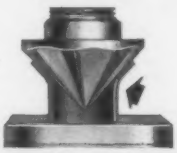
Here is a flaring tool that goes far beyond ordinary tools in quality of flare and ease of operation. It not only rolls 45° S.A.E. flares in the air, but automatically burnishes them to produce the finest flares we have ever seen. Flares all the most popular sizes of soft copper, brass and aluminum tubing.

FAST EASY OPERATION

Tubing is clamped in die block so it extends approximately ¼" above face of block. A single lever at end of block provides quick, easy tightening. With yoke in position, feed screw is turned 3 or 4 revolutions after cone contacts tubing. This makes a perfect flare. When backing off flaring cone, a special mechanism causes burnishing of flare.



No. 500-F Imperial Rol-Air Flaring Tool. Flares and burnishes 3/16", 1/4", 5/16", 3/8", 1/2" and 5/8" O. D. Tubing.
Price each **$9.25**



Makes Stronger Flares

Because flare is not formed against die block, original wall thickness is maintained at base of flare and stronger flares, which stand up far longer under vibration, are assured. Smooth surface dies clamp the tubing without scoring it.

See Your Jobber. Ask for Bulletin 3003

THE IMPERIAL BRASS MFG. CO.
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In Canada: 334 Lauder Ave., Toronto, Ontario

IMPERIAL

Fittings • Driers • Filters • Floats • Charging Lines
Tools for Cutting, Flaring, Bending, Pinch-off, Swedging

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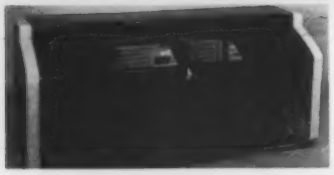


bottle racks and shelves for frosted glasses. Fiber glass insulation. Vanishing sliding doors of hard rubber. Four 18-inch door openings. Accessible hermetic compressor slides out for service. Capacity is normally 30 cases. Polished aluminum trim marks ends of 8-foot case.

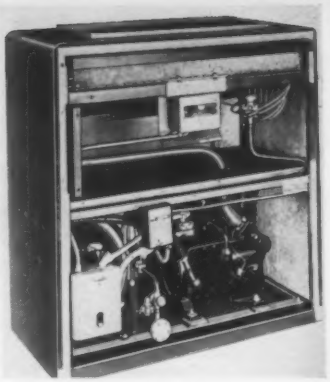
Circle No. 134 on Reader Service Card

Home Air Conditioner

Product: New home air conditioner which easily converts any forced warm air heating system into an all-year air conditioning system.

Manufacturer: United States Air Conditioning Corp., Minneapolis, Minn.

Features: Compact unit utilizes ductwork, blower and filters of warm air system. Can be installed equally well in new or existing homes. Requires only two simple connections to the duct system, a hook-up to the water supply and drain, and electrical



connections. Built in 2, 3, and 5-hp models. Rugged angle iron frame construction with heavy gauge removable panels. Bonderized cabinet finished in gray-green baked enamel. Heavy glass fiber lining is used throughout for thermal and sound insulation. Controls hidden under hinged nameplate. Three-position switch permits two stages of operation, cooling or ventilating only. Built-in thermostat provides automatic control of room temperature. Condensing unit is semi-hermetic with shell and coil type condenser, spring mounted on floating base. Internal water piping provided for connection to city water supply or cooling tower for recirculation. Continuous fluted-fin type cooling coil with staggered seamless tube construction is equipped with multi-port thermal expansion valve.

Circle No. 135 on Reader Service Card

Beverage Cooler

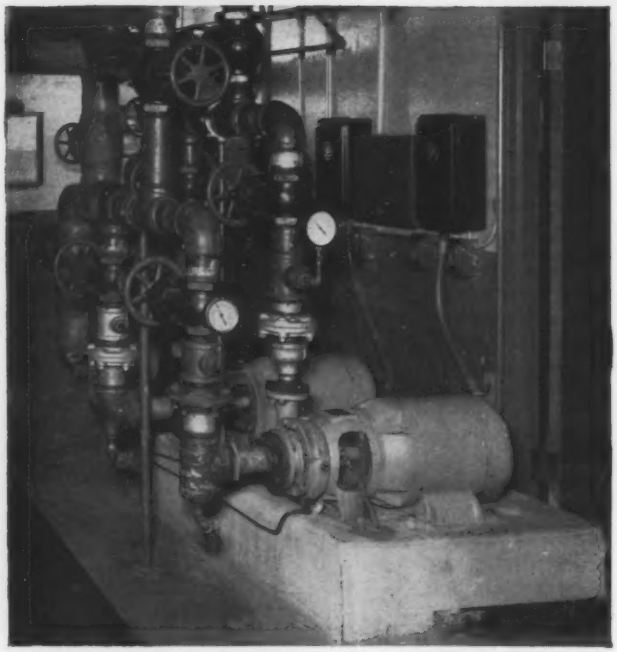
Product: Bottled beverage cooler.

Manufacturer: Uni-Fridge Corp., Minneapolis, Minn.

Features: Designed to fit easily into any standard bar or counter ar-

rangement. Completely self-contained, requiring only plug-in. Cooling regulated by thermostatic expansion valve. Simple one-blower design maintains uniform temperature throughout cooler. Frame constructed of solid

. . . . and I-R Motorpumps for Air Conditioning give you other exclusive Cost-Saving Features:



Two Model 2RVH-20 hp Ingersoll-Rand Motorpumps serving a cooling tower in a large office building.

Easy installation is one of many cost-saving advantages you get when using Ingersoll-Rand Motorpumps for recirculating cooling water in air conditioning units. Consider efficiency, for example. Installations in hundreds of stores, theaters, offices and industrial plants prove you can use a *smaller* I-R Centrifugal Motorpump to do the exact same job as an ordinary pump of *higher* hp. So you save on first cost. You save on weight and space. Installations are less expensive.

And here's an important point: You can put these rugged pumps in and forget them. Designed and built by leaders in the field, Ingersoll-Rand Motorpumps have demonstrated their ability to stand up under severe service.

Ingersoll-Rand air conditioning distributors maintain large stocks of Motorpumps backed up by large stocks in Ingersoll-Rand Branch Warehouses across the country. No need holding up air conditioning installations for lack of a pump . . . you can get immediate delivery now. Profit by using I-R pumps . . . see your nearest I-R representative.

AVAILABLE NOW FOR RUSH DELIVERY IN A WIDE RANGE OF SIZES!

MOTORPUMP

. . . designed for

AIR CONDITIONING SERVICE

Ingersoll-Rand

11 BROADWAY, NEW YORK 4, N. Y.

770-9

Circle No. 84 on Reader Service Card for more information

redwood. Interior is heavy galvanized iron. Full bottom drain simplifies cleaning. Exterior finished in brown wrinkle enamel. Curved slide-up doors are easily removable. Doors, door frame, and trim are stainless steel. Available in 22 and 30-case capacity with adjustable bin dividers.

Circle No. 136 on Reader Service Card

Adjustable Capillary

Product: Adjustable capillary valve for all refrigerants and for high or low temperatures.

Manufacturer: Standard Refrigeration Co., Chicago, Ill.

Features: Cleverly designed adjustable capillary valve for use with refrigeration systems to control fluid flow. Easy to install and adjust, readily cleanable. Can be set precisely to job without guesswork. Eliminates usual capillary noises. Available in two models with capacities ranging from $\frac{1}{20}$ to 1 hp.

Circle No. 137 on Reader Service Card

BUY FROM YOUR REFRIGERATION WHOLESALER

Drill Jig Bushings

Product: "Ace" drill jig bushings.

Manufacturer: Ace Drill Bushing Co., Inc., Los Angeles, Calif.

Features: Made of high quality tool and alloy steels specially treated for uniform minimum hardness in the

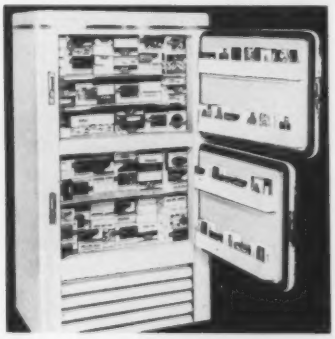
hole. Super-finishing adds to long life. Triply inspected to insure accuracy. Designed to prevent broken drills, damaged parts, and costly inaccuracies. Specially radiused countersink protects drill from considerable dullage and breakage. Chamfer on all bushings permits easy entry. Precision ground lead on all press-fit types provides perfect alignment with minimum shearing. Junction of body and head is two-directional undercut and ground square to assure flat fit on plate. Size is plainly marked. Large inventory assures prompt delivery.

Circle No. 138 on Reader Service Card

Vertical Freezer

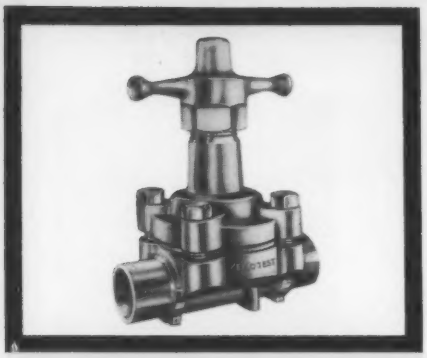
Product: Model F-18 vertical home freezer.

Manufacturer: Howard Refrigerator Co., Inc., Philadelphia, Pa.



Features: 17½-cu. ft. capacity with fully automatic directional freez-

Where Quality Counts Most – it's **KEROTEST**



In the largest Air Conditioned ship afloat

KEROTEST

Another Critical Application

In critical valve applications like the year 'round full ship air conditioning system of the new S. S. UNITED STATES,—KEROTEST Air Conditioning and Refrigeration Valves are the choice. Yes, where quality counts most it's KEROTEST—yet top quality and extra value operating features cost no more.

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Newport News, Va.

See Your Kerotest Wholesaler FIRST

KEROTEST

KEROTEST MANUFACTURING COMPANY
Pittsburgh 22, Pa.

Circle No. 50 on Reader Service Card for more information

ing. 20½ sq. ft. of shelf area. Two separate compartments, with each door being equipped with separate lock and key so that freezer could be shared by two families. Each compartment has capacity of 8¼ cu. ft., providing space for approximately 320 pounds of frozen foods. Two extra food storage shelves on each door. Powered by ⅓-hp Tecumseh hermetically sealed unit. Stands 68½ inches high, 28 inches deep, and 38 inches wide. Shipping weight is 500 pounds.

Circle No. 139 on Reader Service Card

Soft Drink Dispenser

Product: "Carbo-Mix" packaged, pressurized carbonated soft drink dispenser.

Manufacturer: Perlick Brass Co., Milwaukee, Wis.

Features: Large mechanically refrigerated water bath ensures uniform carbonated drinks at all times. Small heavy duty pump submerged in water bath circulates cold water throughout dispenser, and is used not only to refrigerate faucets and faucet standards but also to precool syrup mix

tanks. Three syrups can be dispensed at one time from three 2-gallon syrup tanks. Gravity type syrup dispenser and plain water attachments may be added if desired. Designed to operate on conventional 110-volt electric current. Measures 39 inches high, 33 inches wide, and 25 inches deep. Available in all stainless steel model or with baked black enamel cabinet having stainless steel top.

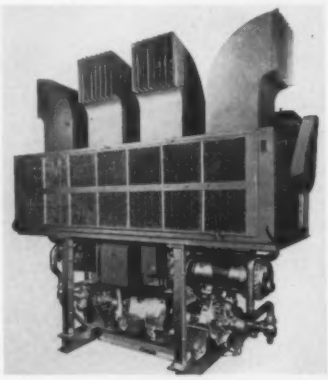
Circle No. 140 on Reader Service Card

100-Ton Packaged Unit

Product: 100-ton self-contained air conditioner for commercial and industrial use.

Manufacturer: Airtemp Construction Corp., Dayton, Ohio.

Features: Factory assembled and shipped as complete unit. Ready for



use after connection of condenser cooling water lines, drain lines, and electrical supply. Adaptable for free blow applications or for use with duct work in central station applications.

"Jobbers — SELL THE LINE THAT GIVES YOU THE MOST —"

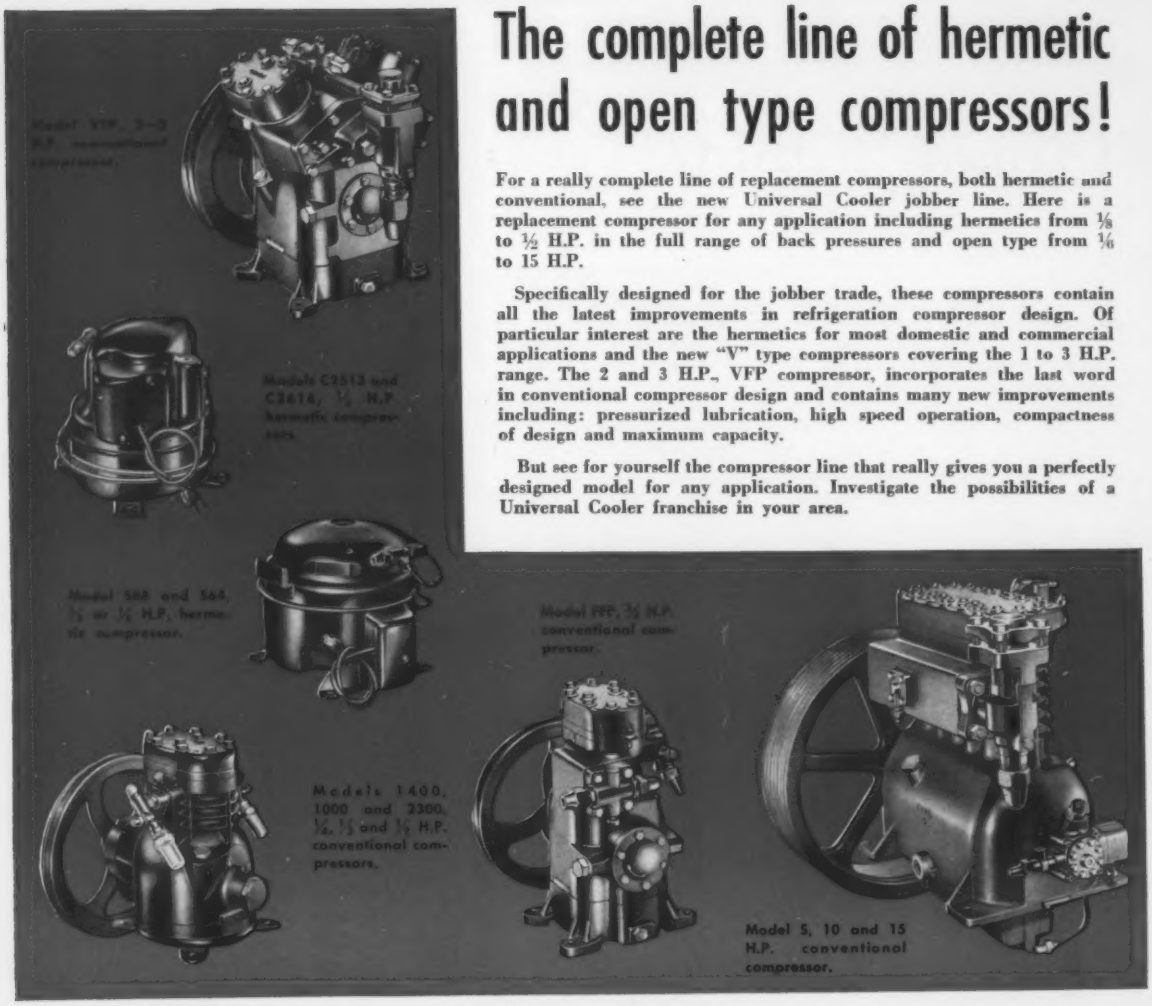
Universal Cooler

The complete line of hermetic and open type compressors!

For a really complete line of replacement compressors, both hermetic and conventional, see the new Universal Cooler jobber line. Here is a replacement compressor for any application including hermetics from 1/8 to 1/2 H.P. in the full range of back pressures and open type from 1/6 to 15 H.P.

Specifically designed for the jobber trade, these compressors contain all the latest improvements in refrigeration compressor design. Of particular interest are the hermetics for most domestic and commercial applications and the new "V" type compressors covering the 1 to 3 H.P. range. The 2 and 3 H.P., VFP compressor, incorporates the last word in conventional compressor design and contains many new improvements including: pressurized lubrication, high speed operation, compactness of design and maximum capacity.

But see for yourself the compressor line that really gives you a perfectly designed model for any application. Investigate the possibilities of a Universal Cooler franchise in your area.



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TECUMSEH PRODUCTS COMPANY
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★ The world's largest producer of condensing units for the refrigeration industry. ★

EXPORT DEPT.: 2111 WOODWARD AVE., DETROIT, MICH.

Circle No. 52 on Reader Service Card for more information

Produces 1 ton of refrigeration for each .76 sq. ft. of floor space occupied by unit. Weighs only 140 pounds for each ton of refrigeration capacity. Can be employed in multiple usage, or relocated in event of business expansion or moving. Consists of three main parts—condensing section, air handling section, and air discharge section—styled as a single assembly. Condensing unit section contains two radial compressors directly connected to a 100-hp motor, water-cooled condenser, Freon piping, and electrical controls. All electrical components controls are mounted together on side of unit for easy accessibility and service. Air handling section contains four fans which circulate 35,000 cfm of air, 28 washable high-velocity filters, and four 4-row evaporator coils. Liquid refrigerant expanding inside the tubes is fed to the coil through four 28-feed thermostatic expansion valves. Also available with one or two row heating coils for winter air conditioning. Air discharge section is made up of four removable cowls which can be turned to direct the air in four different directions. Each cowl is fitted with louvers for horizontal and vertical deflection of the individual air streams. Automatic capacity reduction device keeps unit constantly balanced to load requirements.

Circle No. 141 on Reader Service Card

Wall Display Cabinet

Product: Full vision wall refrigerator for display of dairy products, delicatessen items, and beverages.

Manufacturer: Frigid Igloo Mfg. Corp., Yonkers, N. Y.

Features: Equipped with automatic electric defrost timer. Heavy-duty coils top-and-bottom-connected ready for unit hook-up. Double thermal pane easy glide doors with stainless steel trim. Stainless steel tracks and jambs. Available in 54, 72, 96, and 138-inch lengths. Chrome mouldings for price markers. Acid resistant vitreous enamel porcelain front, interior, and shelves.

Circle No. 142 on Reader Service Card

Unit Air Conditioner

Product: MU-101 "Unitaire" 10-hp self contained air conditioning unit adaptable to offices, markets, stores, manufacturing areas, and similar applications.

Manufacturer: Westinghouse Electric Corp., Air Conditioning Div., Hyde Park, Boston, Mass.

Features: Two 12-inch double inlet fans nominally deliver 4000 cu. ft. of air per minute. Fan section, which can be mounted either on top of cooling section or at side, can be rotated to give six different discharge arrangements when it is top mounted. When mounted at side, five different arrangements are available. Gray-finished cabinet is thermal and sound

MUELLER BRASS CO. DRIERS do a thoroughly effective job of drying and filtering refrigerants

DELUXE — Drying agent sealed in at the factory — under strict laboratory control. Can be filled with any drying agent desired.

REFILLABLE — Just remove inlet plug and inlet screen tube, pour out old drying agent and refill. Replace tube and plug and it's ready for service again.

CARTRIDGE TYPE — Just remove flange cap from inlet end of drier and replace the old cartridge with new dehydrating cartridge which is completely assembled with filter and strainer unit. On side outlet model, cartridge may be replaced without breaking line.

There are Mueller Brass Co. driers available for every type of service. They keep the refrigerant clean and dry, remove the minute particles of foreign matter and they are safe and reliable wherever they are installed. Each of the three types of Mueller Brass Co. Driers shown here have these fine construction features:

Exclusive cone screen filter-strainer filled with chemically purified wool provides a filter area 5½ times the area of a disc. This filter increases the working life of Mueller Brass Co. driers because it virtually eliminates clogging, insures free flow of the refrigerant at all times.

Husky forged brass ends are threaded and soldered to the heavy copper shell to provide an extra factor of safety.

Wide wrench flats make it possible to get tight connections that stay tight.

A beautiful finish that makes an especially attractive installation in any system.

Mueller Brass Co. driers are available in sizes from ¼" to 1⅜" outlets, and dessicant capacities from 3 cu. in. to 242 cu. in.

DRIERS AND FILTERS

WROUGHT COPPER FITTINGS

FLARE FITTINGS

LIQUID INDICATORS

VALVES

STREAMLINE refrigeration products are individual and multiple packaged for complete protection.

Write for catalog R-152 describing complete line of STREAMLINE Refrigeration products.

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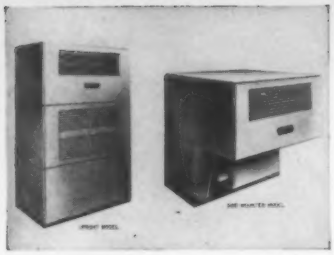
MUELLER BRASS CO. PORT HURON 12, MICHIGAN

Circle No. 54 on Reader Service Card for more information



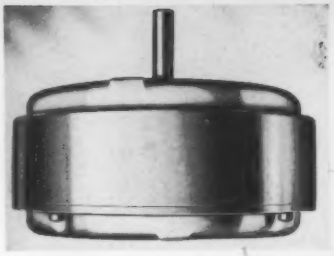
insulated with glass fiber and aluminum foil. Units stands 91 inches high when top mounted, and 62 inches high when side mounted. Measures 61 x 32 inches at base. Adaptability is provided by accessory heating coils. Unit control is provided by control board with selector switch and thermostat adjusting knobs. Other accessories include inlet and discharge air grilles, filters, water regulating valve, and discharge plenum chamber.

Circle No. 143 on Reader Service Card

Electric Motor

Product: "Wafer" electric motor.

Manufacturer: Reuland Electric Co., Alhambra, Calif.



Features: Exceptionally short overall length makes it ideally suited to applications requiring a totally enclosed, air cooled unit with a flat design. Especially applicable to air movement systems where motor is to be mounted within duct. Available in ratings from 1/20 through 5 hp, and in speeds from 450 to 3600 rpm, single phase or polyphase. Unique frame design permits mounting in any position and in a variety of ways to meet special requirements.

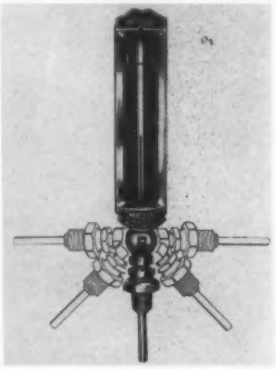
Circle No. 144 on Reader Service Card

Adjustable Thermometer

Product: "Adjust-Angle" thermometer.

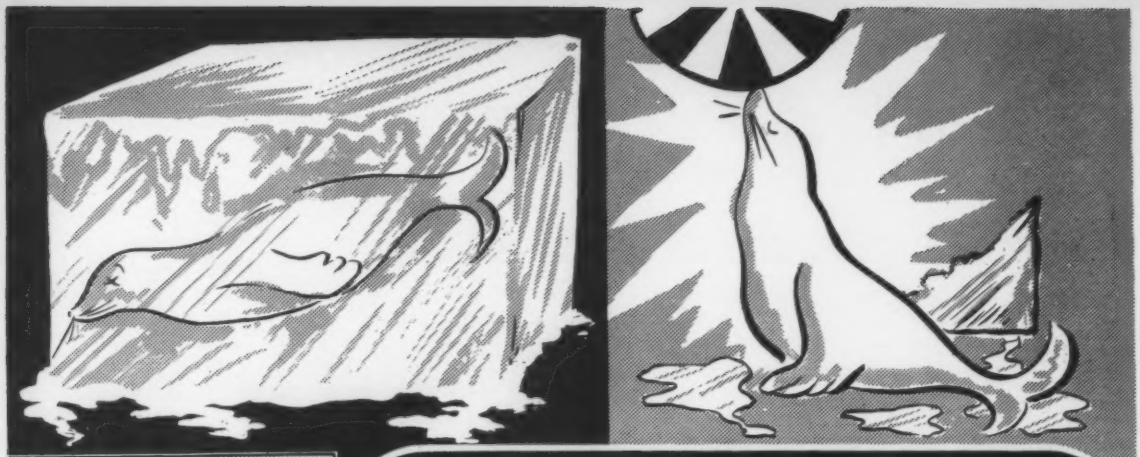
Manufacturer: Weksler Thermometer Corp., New York, N. Y.

Features: Adjusts to any angle, solving all thermometer installation problems. Special development positions thermometer to any angle

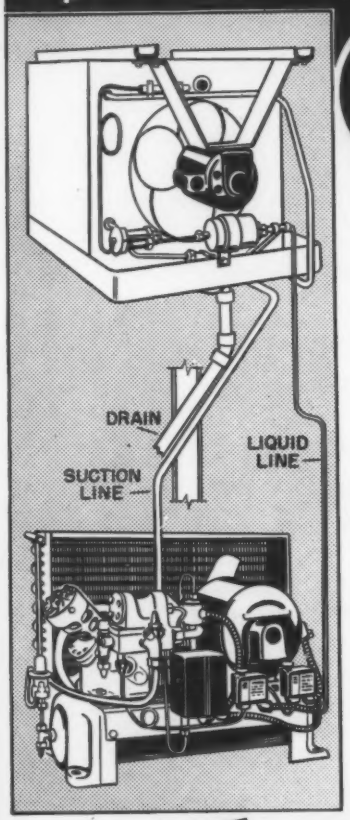


through 180-degree arc, back or front, left or right. Affords complete visibility at all times. Eliminates breakage of tubes due to shock or vibration. Easy angle interchangeability reduces time wasted in waiting for replacements or repairs.

Circle No. 145 on Reader Service Card



Lehigh Engineering Solves Automatic Defrosting!



WITH A COMPLETE PRE-ENGINEERED

AUTOMATIC DEFROST "PACKAGE"

Ready for installation on practically all installations below 32° F

No guesswork – no fumbling – no time wasted! This Lehigh package is so simple, so complete, that all you have to supply are the necessary lengths of suction and liquid line from the compressor and receiver to the evaporator.

EASIER TO INSTALL – COSTS LESS – FOOL PROOF

Any service man can install it!

Included in the package are such components as: Lehigh BLU-COLD Condensing Unit with Lehigh's own 4-way valve. Pressure timer to regulate defrost cycle. Low pressure control. Specially designed evaporator with heated drain pan – blower fan delay control, expansion valve, drier and necessary by-pass arrangement. All factory installed to save service man's time. You can guarantee absolute satisfaction because EVERY PART IS IN PERFECT BALANCE.

Available—Air cooled. 1/2 thru 3 H. P. Air and water combination —1/2 thru 3 H.P.; Capacities from 2,000 to 26,000 BTU Hr. Water cooled systems, to be available shortly. Write for data sheets and price list.

Lehigh BLU-COLD COMMERCIAL REFRIGERATION

Lehigh MANUFACTURING CO.

Division of LEHIGH FOUNDRIES INC. Plant—LANCASTER, PA

Export Dept.
39 Broadway
New York 6, N. Y.

A COMPLETE LINE OF CONDENSING UNITS 1/4 to 5 H.P.

—including modern, heavy duty TRUCK UNITS, HERMETIC UNITS and units for special purposes. Place your name on our mailing list for catalogs and all current releases.

Circle No. 56 on Reader Service Card for more information

about PEOPLE

Joseph Askin has recently joined the engineering staff of Kramer Trenton Co. Askin has had approximately 30 years' experience in engineering, most recently with Techniflex Corp., Port Jervis, N. Y., where he did design work on window air conditioners, flexible hose, vibration eliminators, and refrigeration and air conditioning components. Previously he had been chief engineer of Electrimatic Div., Simoniz Corp., Peerless of America, and Fedders, his service with the latter manufacturer covering 21 years. More than 30 patents have been granted to Askin for his experimental work on refrigeration, automotive and aircraft equipment.

•

L. O. Bower, vice president of Sherer-Gillett Co., has announced appointment of **John T. Sullivan,** Louisville, Ky., as central zone sales manager, covering the state of Kentucky and portions of the states of Illinois, Indiana and West Virginia. Sullivan has been engaged in the retailing and wholesale phases of the commercial refrigeration industry since 1946. Prior to that time, during the war years, he was a plant supervisor with Westinghouse Electric Co. in Louisville.

•

Appointment of **John C. Davidson** as assistant manager of application engineering of Airtemp Div., Chrysler Corp., has been announced by J. F. Knoff, general sales manager. Davidson joined Airtemp in 1947 as a field engineer in the Minneapolis region. He held that position until his present appointment.

•

Two new sales representatives have been appointed by the refrigeration division of Savage Arms Corp. **Herman Schaffer** will cover the Pittsburgh area, including western Pennsylvania, eastern Ohio, Virginia, and West Virginia. **James "Mac" Mac-**

Dougall will cover the Pacific Coast, with headquarters in San Francisco. Schaffer for the past 25 years has been in charge of refrigeration maintenance for one of the country's largest ice cream manufacturers. MacDougall has had eight years of experience in both production and sales with two leading ice cream manufacturers.

•

Four new district managers have been added to the field sales organi-

J. E. Mead

O. W. Weiss

zation of Fogel Refrigerator Co., according to "Terry" Terhune, vice president in charge of sales. **J. E. Mead,** with headquarters in Richmond, Va., now sales - manages the states of Virginia and North and South Carolina which were previously covered by the late G. P. Smith. **O. W. Weiss** of Inter-Mountain Sales Co., Denver, Colo., covers the Rocky Mountain states. And his associate in this operation is Duncan L. McLaren. **Herman Walker** is the new district manager for Central Texas, with headquarters in San Antonio. **M. E. "Mike" Glenn** covers eastern Texas, operating out of Houston.

H. Walker

•

Election of **Robert M. Bell** as a vice president of Koch Refrigerators has been announced by Millard Mayer, president. Bell, who was formerly assistant secretary and comptroller, joined Koch in 1935. He has served in practically all departments of the company. For the past several years, he has been in charge of accounting and general office procedure. During World War II, Bell specialized in analyzing, interpreting, and applying government regulations, priorities, directives, etc. He continues to serve in that capacity.

•

Two new factory sales representatives have been appointed by Jordon Refrigerator Co. **John E. Mack** will represent the company's complete line in the midwestern states of Ohio, Indiana, and Michigan, with headquarters in Columbus, Ohio. **Fred D. Adams** of Adams Sales Co., Waterloo, Iowa, will cover the Dakotas and Nebraska on both the commercial and domestic line, plus Iowa and Minne-

J. E. Mack

F. D. Adams

sota on the domestic line only. Mack has been associated with Jordon for many years in the factory sales division. Adams has a background of more than 35 years of sales and merchandising experience.

•

Appointment of **Harold H. Burrows** as sales manager of the industrial rubber goods sales division, Raybestos-Manhattan, Inc., has been announced by the company's executive office at Passaic, N. J. Burrows has had wide experience in the rubber industry over a period of many years.

Directors of Lynch Corp. have elected **Russell L. Sears** a vice president of the company. Sears came to Lynch in 1944 as sales manager of its compressor division, and was promoted last year to General sales manager of the Ohio divisions of the corporation, supervising sales of "Par" air compressors, refrigeration units, and packaging machines. Prior to his connection with Lynch, Sears was sales manager of the automotive division of Sherwin-Williams Paint Co. He will continue to base his duties at the company's Toledo office.

•

Tenney Engineering, Inc., has announced the appointment of **Leon Aronson** as sales engineer for the Philadelphia district. Aronson will handle Tenney's cooling units, ice makers, finned coil sections, automatic defrosters, and related products. He will contact refrigeration jobbers, wholesalers, contractors, and servicemen from Scranton, Pa. on the north to Wilmington, Del. on the south, and west as far as Harrisburg, Pa. Aronson has been in the refrigeration and air conditioning field for over 20 years. During this time he has served as engineer and sales manager for several firms in the Philadelphia area.

•

Sheldon M. Rutter, industrial designer of Evanston, Ill., has been appointed design and styling consultant for Tyler Fixture Corp. In addition to Tyler products, Rutter will also be active in connection with HarderFreez and Wilson home freezers built by Tyler subsidiaries. Rutter will undertake a long-range functional and appearance design program for the wide variety of refrigeration equipment manufactured by all Tyler plants.

•

General Controls has appointed **Rudy Roedder** as western manager of the firm's refrigeration controls division. According to an announcement by J. F. Ray, vice president in charge of sales, Roedder will be in charge of the Western States territory.

Continued on page 114

New Television Stations Will Be Grade-A Prospects

LIFTING of the three-year FCC freeze on new television stations will open up another broad new field where air conditioning is a virtual must, reports Lawrence K. Macrow, director of application engineering for Carrier Corp.

The ban's end is expected to raise the number of TV outlets in the nation from 170 to approximately 2,000, extending video coverage from 63 cities to 1,200 communities across the country.

Macrow compared the new market to the textile and tobacco industries where for many years air conditioning has been considered essential.

"In contrast to those industries," Macrow said, "where humidity was the first consideration, the overriding problem in television studios is heat itself. The tremendous heat load generated by the batteries of lights in a studio completely closed in by elaborate sound-proofing systems can't possibly be handled without modern air conditioning."

One disastrous result, he pointed out, could be the effect of perspiration generated by the heat on the heavy make-up necessary for television actors.

Carrier made a special study of TV studio problems some months ago and distributed the information to its direct sales offices and dealers, so that they could provide expert assistance when the ban was removed.

OFFICE BUILDINGS . . .

Continued from page 45

their comfort an important matter. When they are comfortable, they can relax, and so are much more at ease when they are being treated or examined. This makes air conditioning important in the waiting room as well as treatment rooms.

Besides adding to the patient's comfort and ease, air conditioning also aids the efficiency of the doctor or dentist, and that of his nurses and other attendants. This important fact is often overlooked by prospects in this class, and it is up to the air conditioning salesman to remind them of it. The fact that, with both doctors and dentists, several hours of night work usually are involved every week is another point to stress in selling to them.

Air conditioning in dentists' offices not only promotes the comfort of the patients, but it also increases the efficiency of the dental operators. Unpleasant temperature and humidity conditions greatly multiply the discomfort suffered from even the simplest form of dental operation.

Several materials that are commonly used, such as zinc oxide cements, silicates, and various impression materials, are more or less affected by temperature and humidity conditions in their manipulation. Air conditioning stabilizes the technique of handling these materials.

RESTAURANTS . . .

Continued from page 48

ditioning salesman to recognize the fact that virtually no eating place is too small to justify some sort of air conditioning installation.

For example, look at the case of a small neighborhood grill in Milwaukee which measured only 20 x 25 feet overall, offered nothing but counter service with only 18 stools and rang up an average business of only $250 to $300 weekly. You wouldn't exactly rate this establishment as a top-bracket restaurant, yet an enterprising air conditioning salesman sold the owner a $2000 installation of packaged air conditioning equipment.

Does the owner figure he got his money's worth? Indeed he does! Since installing the equipment he has found that it's just like the air conditioning salesman told him—not only do more customers come into his restaurant, but those that do come in are come comfortable, and when they're comfortable they stay longer and eat more.

Result? More business, more profit, —and a completely satisfied air conditioning customer. It's up to the salesmen of air conditioning equipment to see to it that there are lots more like him!

RINK TO HANDLE P-K

Patterson-Kelley Co., Inc. has announced the appointment of C. N. Rink Co. of Ardmore, Pa., as exclusive representatives in the Philadelphia area for the P-K air conditioning and refrigeration equipment division. Patterson-Kelley's Philadelphia office will continue to handle all other products in that area, such as hot water heaters, heat exchangers, chemical and process equipment.

SPECIALTY SHOPS . . .
Continued from page 52

dress is tried on, to avoid damages to apparel from perspiration stains.

Air conditioning of fitting rooms is just as important—perhaps even more so—than is air conditioning of the selling floor, since the advantages gained in the one location can easily be offset if the fitting rooms, for example, are not air conditioned. Customers spend more time in the fitting room than in any other part of the store, and a large percentage of the store's sales are closed in those areas. Because the fitting section is small in cubical volume, as compared to the general floor area, and has a greater occupancy concentration, it should probably be kept 2 or 3 F below that of the store's general temperature, just as a safeguard against perspiration damage.

Mark-Downs Cut Profit

No dress shop manager has to be reminded more than once of the mark-downs he has to take as a result of perspiration stains on expensive dresses. Often dresses are so damaged that they can't be sold at all. This really hits him in the pocketbook—and if air conditioning can cut down his losses from this standpoint by only one-half, it will have gone a long way toward paying for itself in a relatively short time.

Testimonials as to the economic benefits of air conditioning have been obtained from several sources. National chains, among them Lerner's and Milgrim's in the women's wear field and Bond Clothing and Howard Clothing in the men's furnishings field, air condition all their stores today as a matter of course.

Volume Jumps 35%

Among men's apparel stores, the management of an Atlanta, Ga., establishment reports a 35% increase in sales volume since air conditioning was installed. Since the air conditioning was part of a general modernization and decorating plan, all of this increase may not be directly due to air conditioning, but the management does credit this feature as a major factor in reducing a store's cleaning bills.

A Shreveport, La., store air conditioned in 1947, reports that " a 10% increase due to air conditioning would be a conservative estimate of what this equipment has accomplished."

A Jersey City men's store reports that air conditioning has been responsible for a "substantial increase" in the volume of business it has done since the equipment was installed, especially during summer months. And a Syracuse, N. Y., men's shop credits air conditioning with increasing its warm-weather business by between 5 and 10%.

Here's what the vice president of a midwest variety store chain has to say about the dollars-and-cents value of air conditioning:

"In time, all of our stores will be air conditioned—ample evidence that we have found air conditioning to be beneficial from all standpoints in our particular field and zone.

"The benefits of air conditioning admittedly are hard to gauge in terms of dollars and cents. This is because air conditioning is so closely meshed with other factors involved in the success of an enterprise that direct

results cannot easily be separated tor appraisal. Observation, however, coupled with what we can learn from accounting figures, convinces us that air conditioning does pay dividends.

"The bulk of our stores are located in Wisconsin. Many of them are in summer resort towns. A hot, humid store minimizes the importance of this traffic, we have found, because people will not spend the time in the store which results in pyramided sales unless the sales area is cool.

"Observation also has shown us that air conditioning builds farm trade. All of our stores, regardless of location, are vitally dependent upon the farmer. Our air conditioned stores, we have noted, attract farm families in large numbers as meeting and 'waiting' places. Increased traffc is the inevitable result and the by-product, of course, is that our merchandise is exposed to more people."

Another user of air conditioning, a west coast apparel chain, has this to say:

"At least 10% of a very substantial increase in sales at our women's apparel store in downtown Los Angeles can certainly be attributed to air conditioning equipment installed as part of a complete remodeling job. We base this figure primarily on increased size of the average sale on peak days when heavy traffic concentrations formerly resulted in uncomfortable conditions that prevented customers from remaining in the store to shop various departments. Now, even on very heavy traffic days, customers are completely comfortable and therefore are inclined to stay and look around after they have completed their planned purchases.

Aids Basement Area

"While we consider air conditioning invaluable on both selling floors, it is in the basement that we have noticed the most tangible results. Here, a relatively low ceiling and a high lighting load with a uniformly heavy traffic created conditions that would have been unbearable except for air conditioning. As a matter of fact, we would not have converted the basement into a sales floor except for the fact that it could be air conditioned.

"The results are outstanding. Perfect comfort prevails on the heaviest traffic days. Customers shop leisurely. The basement floor is just as profitable a selling area—in proportion to overhead—as is the first floor."

Preserves Photo Supplies

Here's yet another example of air conditioning's advantages, this one from a photo supply store in northeastern Ohio. Over and above the normal advantages of increased store traffic, higher sales, less cleaning and general employee efficiency, air conditioning has brought a "plus" benefit in preventing deterioration of the sensitized printing paper which constitutes a large percentage of the company's sales.

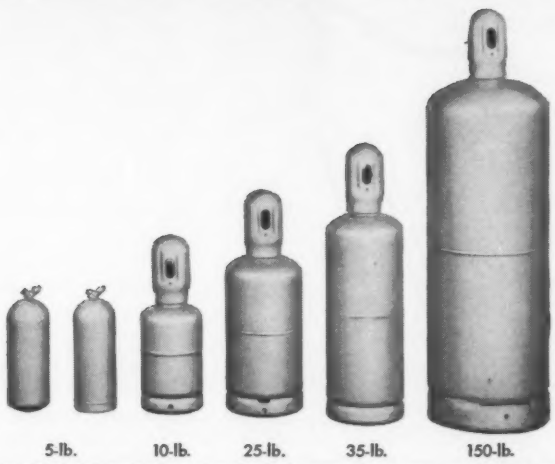
This paper is dated by the manufacturer and must be destroyed or sold at greatly reduced prices after the stamped date. This calls for a close control of inventory, since it is equally important not to run out of paper by keeping inventories too low. Experience in a previous store, not air conditioned, was that out-date paper had virtually no value; even when sold at reduced prices, customers weren't satisfied with it, and returns were high. Now the film stays

DON'T SETTLE FOR LESS ....

use

Prest-O-Lite
Trade-Mark

CYLINDERS FOR REFRIGERANTS



- ✓ Rugged, sturdy construction
- ✓ Uniform sidewall thickness
- ✓ Lightweight—easy to handle
- ✓ Finest workmanship
- ✓ Best appearance
- ✓ Tested far beyond all codes
- ✓ Extra years of trouble-free life
- ✓ They're economical!

You are *sure* that your refrigerant gas containers will give you many years of dependable service—and save you extra dollars—when you own PREST-O-LITE cold-drawn cylinders. They're built by the company which has been the largest manufacturer and *user* of compressed gas cylinders for almost half a century. In each step of design and fabrication the ultimate in gas containers is achieved—and this skill and experience is passed on to you with every PREST-O-LITE cylinder you get. It's no wonder that refrigerant cylinder buyers who have compared feature for feature have found out they are getting the greatest value with top-quality PREST-O-LITE cylinders.

Available in sizes ranging from 5-lb. to 150-lb. capacities—with valve, and cap on all but 5-lb. styles. A few of the popular squat-type cylinders are shown above. You'll like their good-looking appearance, with glossy metallic bronze finish. WRITE TODAY for full information and prices—select the PREST-O-LITE cylinder that fits *your* needs exactly.

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Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

Circle No. 65 on Reader Service Card for more information

in good condition even past the expiration date, and although it still must be sold below regular price, returns are no longer a problem. The store can keep larger inventories and offer a wider selection of photographic papers throughout the year.

Recapping the advantages of air conditioning in the general merchandise and apparel store field:

1. It holds present customers.

a. Against the inroads of air conditioned competitors.

b. Sales people are more courteous, more alert.

c. Merchandise is kept in better condition.

2. It attracts new customers.

3. It increases the average sale per customer.

a. Customers shop more leisurely during hot weather.

b. After completing their planned purchases, they stay to look around.

4. It increases efficiency of employees.

a. They are more cheerful to customers.

b. They serve more customers.

c. They do a better "selling" job.

5. It keeps merchandise attractive.

a. It reduces soilage and handling losses.

b. It keeps merchandise fresher, cleaner, more salable.

c. It reduces the necessity of markdowns.

d. It eliminates losses from perspiration stains, etc.

6. It reduces cleaning costs.

a. It filters the air, removing dirt, soot, etc.

b. Decorations, displays, fixtures remain cleaner, brighter and cost less to maintain.

7. It offsets unfavorable locations.

a. Overcomes disadvantages of a store's location.

b. Overcomes disadvantages of unprofitable areas within the store.

8. It gives effective advertising.

a. Word of mouth advertising by the store's customers.

b. The store's advertising copy takes on new significance.

9. It reduces lost time of employees.

a. They are off fewer days because of illness, or simply because they "don't feel like working."

b. Employees suffer less from allergic and respiratory illnesses.

10. It adds prestige.

a. It marks the store as a modern business place.

b. It gains increased good will from the buying public.

11. It gives an advantage over competitors.

a. It is an aid in getting business away from non-air conditioned competitors.

b. It protects the store against losses to air conditioned competitors.

TEXAS REPRESENTATIVE

The Hammel-Dahl Co. of Providence, R. I., manufacturers of automatic control equipment, announces the appointment of Cowles & Co. of Dallas, as their sales and service representatives in the central Texas area.

BUY FROM YOUR REFRIGERATION WHOLESALER

INDUSTRIAL PLANTS . . .

Continued from page 57

heart of the cotton country, is an installation that points up this use. The classing and buying of cotton is done on the basis of samples, one of which is taken from each bale. Air conditioning takes the guesswork out of classing cotton. If cotton dries out, the staples shrink and won't pull out so long. And the shorter the staple, the less money it will bring. This offers an obvious advantage to the buyer of cotton. Standard conditions for a system for this purpose are 75 F dry bulb and 65% r.h.

For the sake of brevity, here are a series of brief paragraphs indicating the use-value of air conditioning in various other industrial applications:

A "ROOF COOLERANT" paint which is said to deflect up to 75% of the sun's radiant heat and bring below-roof temperatures back into the comfort zone has been developed by the Tropical Paint & Oil Co., of Cleveland.

Tropical's "Roof Coolerant" consists of large flakes of metallic aluminum, applied with a special liquid bond, to create a complete, seamless "silver blanket" which throws back the sun's heat. The paint can be brushed or sprayed by unskilled labor, the company claims, and reports that tests have found as much as 26 degrees improvement in both roof and below-roof temperatures following application.

Factories, retail show rooms, department stores, hotels, motels, hospitals, dairies, poultry farms, cold storage plants, banks, schools and churches are among the present users of the paint, the company says. It also asserts that the paint prolongs roof life by helping to maintain the flexibility needed for expansion and contraction caused by sudden temperature changes.

In potato storage, a system installed by a grower in Colorado enabled him to store 22,000 100-pound sacks of potatoes until market conditions were most favorable, and to sell them at $1 a sack above what he would otherwise have been able to obtain.

Photographic films and other materials that are photo-sensitive deteriorate with age, and the deterioriation process is slowed down as temperature is lowered. Both black-and-white color films should be stored at below 70 F for up to two months, below 60 F up to six months, and below 50 F up to 12 months, with relative humidity in the 40 to 60% range. Processed film is sensitive to humidity, and if it is to be kept for long periods this should be controlled to prevent stickng, mold, etc.

Wax-coated materials (waxed papers to be used as wrapping materials, for example) will stick together and become unusable if exposed to high temperatures. Cellophane requires about 65 to 70% and a relative humidity of 45 to 50% for best protection; aluminum foil requires a dry storage space.

In shaping and finishing leather articles, carborundum paper can be used for abrasive purposes longer if held at a relative humidity of 50%. Some manufacturers of leather goods are now storing a carborundum paper in air conditioned areas where proper temperature and humidity can be kept.

Patent leather and other leathers with a high gloss finish will tend to stick together when temperatures rise. They are much better protected and much more easily handled when held

at a lower and constant temperature.

Automobile storage batteries and other batteries will lose electrical charge faster when exposed to high temperature, and since recharging is expensive it is a great advantage to keep them under proper temperature control.

Growth and development of flower and plant bulbs can be controlled by air conditioning. By temperature regulation, these plants can be made to flower at any time of year. This enables for florist or nursery operator to "time" his production to meet expected peak demands throughout the year, and to reduce his losses by "unseasonable" growth due to freak weather at various times of the year. Controlled storage, besides, improves the quality of bulbs and flower bushes, so the grower can get a premium price for them.

Valuable objects of air and documents required controlled conditions to protect them against the ravages of fungi and insects, as well as the deterioration caused by the air being too dry or too moist. An increasing number of art galleries are realizing, or could be made to realize, the worth of air conditioning in preserving their treasures.

In plants producing pharamceuticals, rigid humidity control is necessary because both the capsule and the medicine that goes into it are very sensitive to moisture. This same "hygroscopic," or moisture pick-up problem is true in powdered metal manufacture, in the manufacture of abrasive wheels of the molded plastic type, in the manufacture of powder and explosives, to name some of the most readily recognized applications.

Benefits Drafting Rooms

Drafting rooms need air conditioning because, if the drawings or templates made from them are to be used in the manufacture of working tools or parts, exact accuracy is necessary. Air conditioning prevents variations in size and distortion in shape. In addition, draftsmen turn out more and better work in atmospheres in which uniform air conditions are maintained, and where perspiration and dirt do not affect their drawings.

The manufacture of precision optical equipment requires exact temperature and humidity conditions, because a high degree of precision is required. Humidity, temperature and dust control are important also in the many different types of instrument assembly, to insure constant working conditions and prevent fogging of instrument lenses during assembly. Any film or foreign matter between the glass pieces being fused can result in a faulty product.

Minimizes Corrosion

In all types of precision instrument assembly, control of temperature and humidity is important to steady production and a quality product. Even a speck of corrosion, a few flecks of dust, or a sweaty fingerprint can cause rejects of expensive finished products. In the plant of a fine watch manufacturer, rejects had been running high, and analysis showed that the principal cause was corrosion from sweaty fingerprints on the mainspring. High temperature and humidity in the assembly room made the workers sweat, and the moist fingers did the damage. After air conditioning, rejects went down and production went up.

Maintenance of close tolerances in

precision manufacture depends on having gauges and standards that are absolutely accurate. In machine shops, for instance, the requirements are so exacting that some precision parts have been rejected when made on machine tools exposed to the sun at certain hours of the day. Also, some parts require constant temperatures during the several days required to produce them. Gauges also are very sensitive to changes in temperature, humidity and cleanliness during their manufacture and use. A change of as little as 1 degree in the temperature of the room will show up in the gauges, experienced operators say.

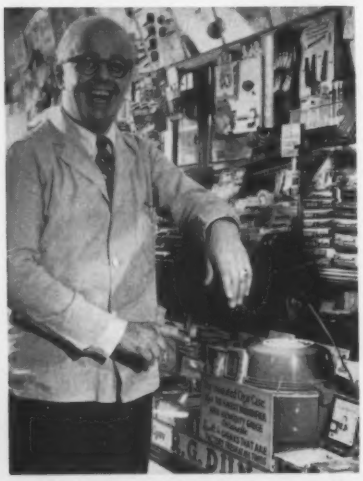
To sum it up, industrial plants need air conditioning because it affords:

Clean air for quality control, prevention of waste and spoilage due to air-borne dust and dirt, reduced plant maintenance costs.

Dried air for quality control, prevention of losses due to corrosion caused by excess humidity.

Constant temperature for quality control, maintenance of dimensional accuracy in machining operations, interchangeability of parts.

Overall good working conditions for maintenance of production schedules, higher quality workmanship, less absenteeism, better health of employees, maintaining skilled labor.



UNUSUAL USE of a humidifier—for keeping cigars fresh—has been made by Irving Zimring, Chicago drug store owner, who has found that this little "plus" in his merchandising display pays off in increased cigar sales and satisfied customers. Since he installed the humidifier, Zimring says, he's been doing at least twice the cigar business he ever did before. Customers can feel and taste the difference in the cigars, he says; they feel they're getting more than their money's worth, and they come out of their way to buy from him.

NEW SERVEL SUPPLIERS

Servel, Inc.'s electric refrigeration division has recently appointed a number of wholesale suppliers, as follows:

Acar Supply Co., Philadelphia; Jordan Supply Co., Buffalo; Enochs Sales Co., New Orleans; Orlando (Fla.) Refrigeration Supply; Savannah (Ga.) Refrigeration Supply, and Capital Refrigeration Supply, Tallahassee, Fla.

BUY FROM YOUR REFRIGERATION WHOLESALER

G-E APPOINTS SIX TO MANAGEMENT POSITIONS

Six key management positions in the General Electric Co.'s newly-created Appliance Control Department were announced by John C. Helies, general manager.

They are: Phillip Gomez Jr. as manager of sales, Arnold Dunn as manufacturing engineer, James M. Clark as manager of finance, Alden L. Thomas as superintendent of the Morrison Plant, Thomas J. Kelly as design engineer, and James H. McDuffie as supervisor of personnel.

THE HEATING SIDE OF AIR CONDITIONING

By Wm. Henry Knowlton

Measuring Heat Losses

THE importance of obtaining accurate heat losses by making a complete Btu calculation of the building cannot be overestimated.

Some 15 or 20 years ago "rule of thumb" and "shortcut" methods for estimating the size of heating equipment were very popular. In many cases they were fairly satisfactory, due to two factors: first because most residences and small commercial buildings were very much alike in construction; and secondly because the capacity of a hand fired coal heating system was very flexible.

Capacity vs Heat Loss

With the advent of automatic fuels, however, and the trend to a wide variety of building materials, it becomes essential that the equipment capacity be balanced accurately against the heat loss for the structure. It should be understood that the so-called "modern" or "California type" home, having a huge glass area across the front, and no basement, presents an entirely different heating problem than a house of conventional construction, even though both have the same floor area and cubical content.

Basically, the heating system should be designed to heat the structure when the fuel burning equipment operates constantly in coldest weather.

For the heating and air conditioning contractor there is also an economic reason for accurate sizing of equipment. A job sized by rule of thumb, with its inherent factor of safety, may require larger equipment and larger ducts or pipes than is actually necessary. In such an event the contractor finds himself in an unfavorable competitive position, and may lose the job on the basis of price.

Along with an equitable first cost, the owner of any heating system is interested in two things—comfort in every room, and economical operation. Both of these results are dependent upon accurate measurement of heat losses from the building.

A house is losing heat during the entire period when artificial heat is being applied, just as the human body is constantly losing heat. Our problem then, is to determine the quantity of heat lost in any given period, both from the entire house and from individual rooms. Heat lost from the entire structure determines the size of heating equipment; heat lost from individual rooms determines the size of ducts and registers, or pipes and radiators or convectors.

Calculating heat losses for a given structure requires an understanding of the difference between heat *quantity* and heat intensity. The latter is measured by the thermometer, with a reading we know as *temperature*. The quantity, however, is calculated in a unit of *time*, which has been established in Btu *per hour*. This represents the total quantity of heat lost from the building in one hour, depending upon indoor and outdoor temperature.

The "design temperature difference" is based on the coldest weather *usually* encountered in the vicinity where the building is located. Outdoor design temperature may vary from minus 25 F in Medicine Hat, Alberta, to plus 35 F in Miami, Florida. Tables of design temperatures for all areas will be found in the ASHVE Guide, and in Manual No. 3, published by the National Warm Air Heating and Air Conditioning Association.

Indoor design temperatures are usually established at 70 F, which meets FHA standards and most local building code requirements for heating. Most accepted calculation methods have a certain factor of safety, so the structure may be kept at from 72° to 74° if the owner desires. Additional factors of safety are provided for bath rooms, sun rooms, basement living rooms, and play rooms.

Design Temperature Difference

In making heat loss calculations we are primarily interested in the "design temperature difference"—the difference between outside and inside design temperatures. If, for example a building is located in an area having an outside design temperature of —10 F, the design temperature difference—based on an inside temperature of 70 F would be 80 F.

The rate of heat loss on any structure is influenced by two factors—design temperature difference, and building construction. The greater the temperature difference, the faster heat

will be lost to the outside. At the same time, if the building is tightly constructed and well insulated, the rate of heat transmission or loss, will be materially reduced.

For example, a plain window will transmit about twice as much heat per hour as one protected by a storm sash. During the heating season, however, the heat flow is always from inside to outside and the building loses heat through walls, ceilings, windows, doors, and floors.

Because building construction determines the rate at which heat is transmitted to the outdoors, we must first obtain the areas of all surfaces exposed to the outdoors, or exposed to a cold space within the building (see Figure 1).

There are five types of surfaces though which heat loss occurs from the building. These are:

1. *Windows and Outside Doors*, and any other glass surfaces such as skylights and glass brick walls. (The rate of transmission through an outside door is assumed to be the same as through an ordinary window.)
2. *Wall Surfaces* exposed to the outdoor air, and basement walls in contact with the ground.
3. *Cold Interior Partitions*, on one side of which is an unheated space.
4. *Cold Ceilings*, above which is an unheated space.
5. *Cold Floors*, above an unheated space or in contact with the ground.

Calculating Building Areas

Areas may be calculated from the dimensions given on blueprints, or by scaling off the print. If the structure is already built, it should be carefully measured with a folding rule or measuring tape.

The usual practice is to make heat loss calculations for all rooms to be heated. If unfinished attic space is to be finished in the future, complete information on the future construction should be obtained so the correct size ducts or pipes may be provided at the time of building the house.

Rooms below the attic room, however, should be figured on the basis that the attic space is *not being heated*, as it may be a number of years before the attic rooms are finished.

Basement rooms used for living quarters, such as studies, recreation rooms, hobby rooms, and studios should be treated like any normal living quarters, particularly if the room is separated from the furnace room.

Basement storage spaces, such as fruit rooms and fuel rooms, usually are not heated. Laundry rooms, however, should be provided with heat.

Most attached garages are not heat-

Heat Losses Must Be Carefully Calculated

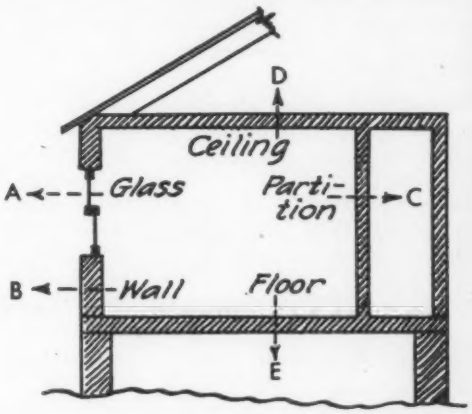
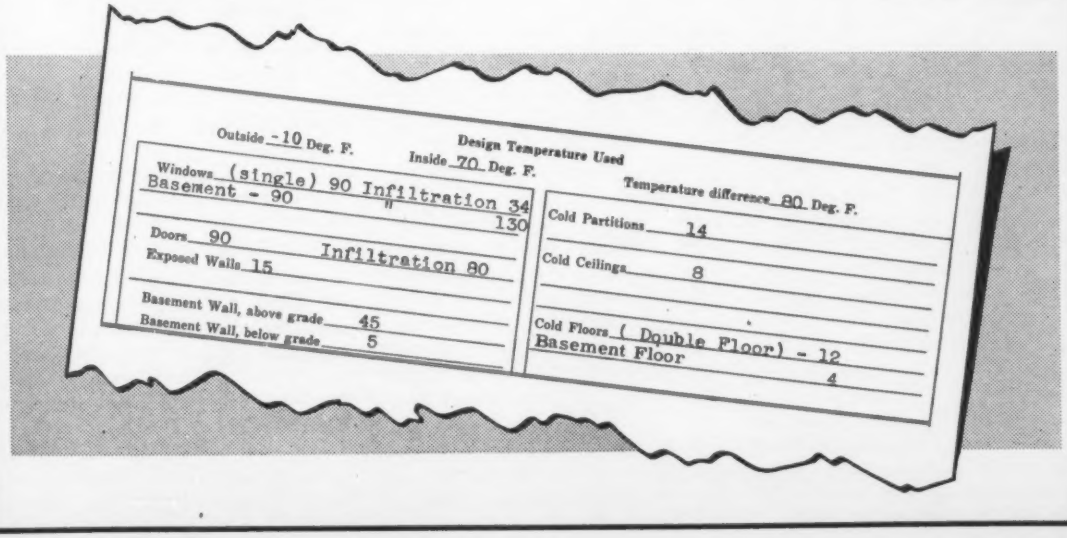


FIGURE 1

Five types of surfaces through which heat losses occur.

FIGURE 2

Section of a typical "work sheet" for use in making heat loss calculations. Figures noted on this sheet are total Btu per square foot of area, which is the heat loss factor multiplied by the design temperature difference. EXAMPLE: single glass—heat loss factor of 1.13 x 80 t.d. = 90.



MORE INFORMATION IS AVAILABLE

You may find that you need additional data concerning certain types of heating equipment for use on a job you're currently doing, or just for your files for future reference. If so, we will see to it that you receive the information you want if you will circle the appropriate numbers as indicated below on the Reader Service Card that is enclosed in this issue.

171. Unit Heaters
172. Space Heaters
173. Heating Coils
174. Heating Controls
175. Finned Radiation
176. Baseboard Radiation
177. Ventilator Fans
178. Humidifiers
179. Room Thermostats
180. Exhaust Fans
181. Circulating Pumps
182. Grilles
183. Registers
184. Air Diffusers
185. Radiators
186. Air Filters
187. Dampers
188. Pipe Insulation
189. Duct Insulation
190. Floor & Wall Furnaces

ed, due to the large losses that incur from the doors. If heat is provided, however, the inside design condition should be 40 F.

Open sleeping porches are not ordinarily heated.

Owners sometimes have a vague notion of installing insulation, or storm windows "in the future." As this many never be done, your heat loss calculations should be based on the existing structure, and so stated in writing in making a proposal.

Use a Good Work Sheet

In making heat loss calculations most heating engineers use a good "Work Sheet" together with tables of standard heat losses for various types of building construction. These work sheets may be obtained from equipment manufacturers, from the National Warm Air Heating and Air Conditioning Association, or from the Institute of Boiler and Radiator Manufacturers. It is also a good idea to have a copy of the ASHVE Guide available for reference to determine heat loss factors on unusual types of building construction.

Most tables of heat losses published by industry associations and by manufacturers have the Btu loss per square foot already multiplied by the Design Temperature Difference. When working with tables in the "Guide" however, it will be necessary for you to do this multiplying yourself.

For purposes of explanation we will refer to the Work Sheet of the National Warm Air Heating Association (see Figure 2), not because it is superior to others used in the trade but because it is representative of good heating practice.

The first thing to fill in on any Work Sheet you use is the details of building construction and the *total* Btus per square foot of surface, including windows, doors, exposed walls, basement walls both above and below grade, cold partitions, cold ceilings, and cold floors. Infiltration losses should also be included.

CHANGES IN HARRY ALTER SALES STAFF ANNOUNCED

Changes and additions to the Harry Alter Co. sales staff were announced recently by Arthur S. Alter, vice president and general manager.

William A. Reasoner has been appointed manager of "white goods" sales, replacing James M. Alter, who is moved to a newly created post as assistant general manager of the TV and appliance division. Reasoner was formerly department store sales manager of the Crosley Div. of Avco Mfg. Corp.

John Colle succeeds Lee Litt as district manager for Lake, Newton and Porter counties in Indiana. Litt has been elected assistant treasurer of the Alter company.

HONEYWELL ASSIGNS 20 TO FIELD SALES STAFF

Twenty-six sales engineers have been added to the field sales staff of the Industrial Division of Minneapolis-Honeywell Regulator Co., it was announced recently. The new men have recently completed a 13-weeks intensive training course in instrument maintenance at the company's Brown training school in Philadelphia.

The new field salesmen have been assigned to 20 of the company's nearly 100 branch offices in the U.S. The men and cities to which each has been assigned are:

Harry R. Nichols and Edward J. Roach to East Orange, N.J.; John J. Heavey, Syracuse; John M. Caylor, Harrisburg, Pa.; Jack M. Fettig, Donald C. Roberge and John C. Sharp, Detroit; Vendel W. Immel, Saginaw, Mich; Alexander W. Spears, Pittsburgh; Axel H. Magnuson, D. J. McDowell, and Harry W. Spongberg, Chicago; and Wilbur J. Smith, Milwaukee.

Robert D. Werckle, Peoria; Leland K. Smith, Davenport; John S. Hafling, Louisville; Glenn Cullen, Billings, Mont.; Richard W. Polgreen, St. Paul and Minneapolis; John H. Tenison, Houston; Calvin L. Perilloux, New Orleans; Robert W. Smith, Kansas City; Jack T. Teed, Tulsa; Max R. Curtis, Salt Lake City; Richard E. Roberts and Roland T. Williams, Los Angeles; and Harvey L. Tibbals, San Francisco.

QUIET-KOOL ADDING TO FOREIGN COVERAGE

Appointment of a number of foreign distributors for Quiet-Kool room air conditioners has been made recently through the International Sales Div. of Sylvania Electric Products, Inc., reports Eugene M. Peters, vice president in charge of sales for Quiet-Kool Div., Newark, N. J.

New foreign distributors include:

Cia Tecruca Comercial Peru, S. A., Lima, Peru; Borinquen Music Corp., San Juan, Puerto Rico; Ceballas & Cia Ltda, Barrinquilla, Colombia; Arturo Morales, S.A., Sonora, Mexico; Sur Industries, Calcutta, India; L. H. McMasters, Brazil; K. Karayannis & Co., Athens, Greece; Libka Tacaret T.A.O., Istanbul, Turkey; Werner Daetwyler, Zurich, Switzerland.

FOOD STORES . . .
Continued from page 37

ported a decided improvement in employee efficiency and morale following installation of air conditionings backed up this report with figures showing that they were able to cut their employee turnover by nearly 50%.

Sales Point No. 6: Improved employee morale means an improvement in attitude and a more cheerful approach to the customer. Thus a big source of customer irritation is eliminated and the shopper leaves the store in a better frame of mind. This improved atmosphere of customer relations pays off heavily in repeat business.

Sales Point No. 7: In addition to its effect on fresh produce, air conditioning also enables non-refrigerated fruits and vegetables to retain their freshness over a longer period of time. Dehydration and loss of weight—which is reflected directly in loss of profits—is substantially reduced. Maintenance of proper atmospheric conditions also eliminates the need for special care of such profitable items as candies, pastries, raisins, etc.

Sales Point No. 8: Decreasing operating costs is just as important as increasing business. It makes the same difference in the profit picture. In the air conditioned food store, refrigeration equipment—particularly that of the open type—does not have such a heavy load imposed upon it, and consequently experience has shown that it will last longer with fewer repair bills to pay.

Here's what a southern super market operator has to say about this phase of air conditioning benefits: "We had been having trouble with our open display cases. When hot weather came we could not keep them up to capacity, and they were apt to steam up and accumulate frost. Since the installation of air conditioning the strain on these cases has not been so great and we have had no trouble with them at all."

Sales Point No. 9: Citing the operating costs of his air conditioning equipment, one small town food merchant described this equipment as the cheapest and most effective advertising he could buy. Especially in hot weather, he pointed out, the lure of shopping in air conditioned comfort is played up in all of the store's advertising, and a great many of the customers that we first obtain through this method stay with us the year around.

Sales Point No. 10: It is a known fact that many foods deteriorate and lose a good portion of their vitamins and other healthful body-building qualities when they are subjected to dehydration and high temperatures. Thus, promoting an air conditioned store also gives the market operator a chance to promote healthier foods.

Sales Point No. 11: The importance of air conditioning in helping to prolong the life of all types of store furnishings and equipment through the maintenance of controlled temperatures and humidities also should not be underestimated. This means a minimum of damage from expansion, contraction, warping or drying out, and a consequent

extension of the replacement factor of all equipment so affected.

Sales Point No. 12: It goes without saying that air conditioning, through its function of filtering the air and removing all soot, dirt, dust, and other foreign particles, reduces the need for cleaning and dusting the stock and fixtures in any food market. In fact, many air conditioned markets report that the need for such cleaning has been virtually eliminated. Not only does this save labor costs but it also permits a more effective utilization of employees' time and employees' efforts.

Sales Point No. 13: One metropolitan super market reports that since the installation of air conditioning general store cleanliness has improved about 75%. This results in a neater and more attractive store appearance and, more importantly, it means sizeable savings on periodic cleaning and redecorating costs, inasmuch as these functions need not be performed as frequently as before the air conditioning was installed.

"Easiest sale I ever made!"

Sales Point No. 14: Actually this sales argument—the fact that air conditioning gives the food store merchant a definite advantage over his non-air-conditioned competitors—is simply a combination of all the others previously listed. Patently, if the air conditioner market benefits in the 13 ways previously listed, its competitive position will be decidedly strengthened.

For the super market operator, then, his investment in air conditioning represents a lot of long-range planning in which there is no room for "one shot" sales speculation. His air conditioning system should be as distinctive a trademark to his customers as the sign over his front door.

The value of an air conditioning system lies not in the possession of a certain amount of equipment, but in the ability to produce specific results under the design conditions, to provide continued satisfaction, to present an attractive appearance, to give continued and reliable service quietly and at a minimum cost of operation throughout a long period of useful life.

These benefits can result only from the use of equipment that is high in quality, modern in performance, adequate in capacity, and selected for the job by experienced, well-trained engineers. The super market operator will soon learn that it is not always the cheapest system or the lowest contractor's bid that will bring him these benefits at the lowest over-all cost.

BOOK REVIEW

Title: **Marine Air Conditioning and Refrigeration**
Author: **Earl S. Shulters, construction representative, U.S. Maritime Administration**
Publisher: **Cornell Maritime Press, Cambridge, Md.**
Price: **$6.00**

This volume is designed to bring to the user a new, comprehensive, and up-to-date coverage of design, construction, operation, and maintenance procedures for all types and systems of air conditioning and refrigeration equipment now in marine service.

Material in the book is based on the author's 25 years of experience in this field, plus the cooperation of other leading refrigeration engineers and manufacturers. Intended for practical use by practical men it is presented in "how to" language.

Geared to meet the expanding need for trained men in the design, construction, operation, and maintenance of shipboard cooling equipment, this text can be used as a reference book for design engineers and draftsmen, as a textbook for school classes, as a handbook for the construction gang, or as an operating manual for the engineers and "reefers" aboard ship.

It is thoroughly illustrated by schematic diagrams, wiring diagrams, line drawings, photographs, and 46 pages of tables and charts.

BUY FROM YOUR REFRIGERATION WHOLESALER

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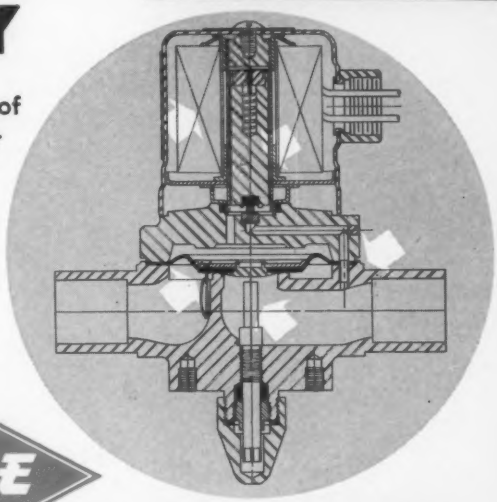
In all cases, the materials used in the manufacture of **JE** SOLENOID VALVES are the best available for the job. The valves for ammonia and brine service have semi-steel bodies made under rigidly controlled foundry conditions. The valve bodies for all other services are made of highest grade bronze. All internal parts are of stainless steel. In short, the best obtainable materials are used — regardless of cost.



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3. **LONG LIFE** — Cool Coils
4. **DURABILITY** — All corrosion-resistant materials
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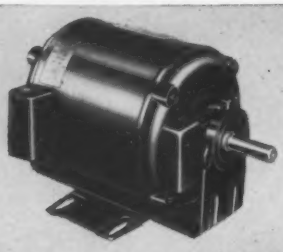
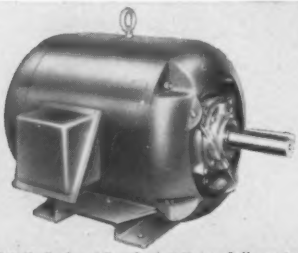
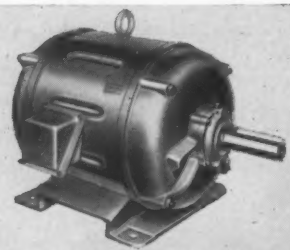
TYPE RK—Capacitor-Start Induction. For single-phase general purpose applications requiring high starting torque—normal starting current. Economical to maintain . . . requires minimum servicing . . . free from vibration and noise . . gives years of service. ⅙ to 3 hp.



TYPE RA—Repulsion-Start Induction. For general purpose applications with high starting torque—low starting current. No other single-phase motor has its ability to continually start heavy loads, or to stand up under long and frequent starting periods. ½ to 15 hp.



TYPE CP—Totally Enclosed Fan-Cooled Motor. Fully protected against filings, steel chips, grit, abrasives, or fumes. Requires no maintenance other than periodic lubrication. Also available in explosion proof type HP. 1 to 250 hp.



TYPE RP—Open type Polyphase Squirrel-Cage Motor. Steel frame—completely drip-proof in any horizontal position, in frames 326 and smaller—available with either sleeve or ball bearings which may be relubricated when necessary. For all general purpose applications. ⅛ to 400 hp.

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1. Wagner Motors, for over sixty years, have established unexcelled records for continuous, troublefree performance.

2. Wagner Motors are well-known for their superior quality and their sturdy design and construction.

3. The many types of motors and motor modifications in the standard Wagner line helps the designing engineer in his selection of the right motor for the job.

4. Users of Wagner Motors are assured of fast service through Wagner's nation-wide service organization of 26 Wagner-owned Service Branch Warehouses and more than 650 Authorized Service Stations which provide on-the-spot service, replacement motors, or genuine Wagner motor repair parts.

The wide range of types and sizes of Wagner motors permits the selection of a trim, compact standard motor to meet your definite needs. Bulletin MU-185 gives full information on the complete line. Write for your copy.

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CONTRACTORS

NEWS • ACTIVITIES • PLANS

End "Bidding" Over Warranties, RACCA Urges Manufacturers

ALARMED by what it terms the "struggle" among air conditioning and refrigeration equipment manufacturers "to out-bid each other" in the length of time of their product warranties, the Refrigeration and Air Conditioning Contractors Association has reiterated its stand as favoring "no more than a one-year warranty on any commercial refrigeration or air conditioning equipment."

The Association's stand is emphasized in a letter written by George T. Howe, chairman of RACCA's Trade Relations Committee, to all national manufacturers, to other industry associations and to trade publications.

RACCA said it "will attempt to get the cooperation of all the other trade associations of the industry, to the end that these ill-advised practices will cease and the welfare of the industry be maintained."

Called Detriment to Buyers

In the Association's opinion, "manufacturers have overlooked and are continuing to overlook the detriment to the buying public and to all the marketing levels below the manufacturer . . . in this race.

"Manufacturers, as do others, must face their competition, but in their activity they must never overlook the ultimate result of their actions.

"In the opinion of RACCA, the activity of manufacturers in this warranty race will only lead . . . to ruinous competition among the manufacturers and will deal severely with the welfare of the consumer, the distributor, the wholesaler and the contractor."

Foreseeing such results, the Association said, it passed a resolution at its recent annual meeting in favor of a one-year limit on warranties. Many complaints about the effects of long warranties adopted by some manufacturers have come into the national office, RACCA said.

The association said that "RACCA, looking always to the welfare of the consumer, can see only pain and distress to such consumers when such a policy is allowed to spread and ultimately will cause the refrigeration industry to fall into disrepute."

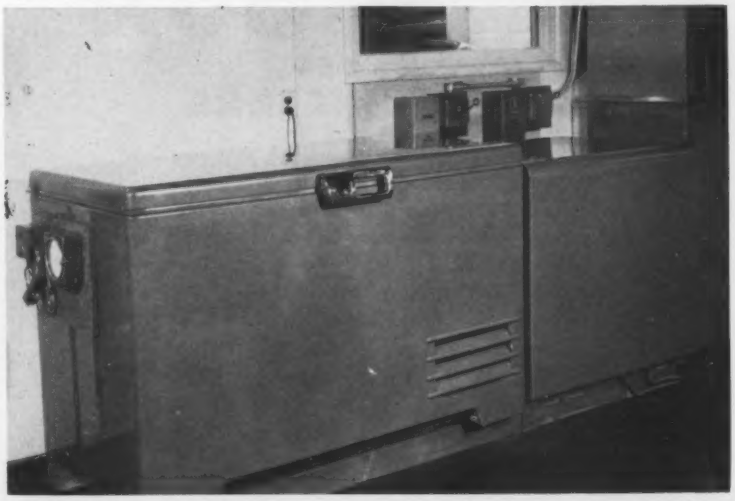
The letter by Trade Relations Committee Chairman Howe, outlining RACCA's position in the matter of warranties, reads:

"We have watched with alarm the growing tendency by manufacturers of air conditioning and refrigeration equipment to advertise a five-year warranty on their products. We feel . . . that it is a step that should not be taken. We would like to point out the various reasons why we feel this way:

"1. It creates in the customers' minds a false feeling of security, even though the waranty is fully explained to them at the date of sale, and when difficulty is encountered after the first year they expect free parts and, in some instances, free labor. In their anxiety to get something for nothing, they will argue with the contractor, while the manufacturer who was the cause of the dispute goes blithely on his way to dream of other schemes to sell his equipment.

"2. The manufacturer reserves the right to reject the equipment if upon inspection it proves the unit had been subjected to abuse. This, again, is a source of ill feeling between the cus-

CONTRACTOR BUILDS INDUSTRIAL FREEZING CABINETS



INDUSTRIAL FREEZING CABINETS like this are being built by Conrad Refrigeration, refrigeration contractor in Holland, Mich., in a wide variety of sizes and temperature ranges suitable for all types of test or production work. The model shown is a two-temperature job that has 7 cu.ft. of –150 F space and 3.3 cu.ft. of –40 F space. It is provided with an automatic thermostat control and recording instrument. This equipment uses Freon-13 and Freon-22 in a cascade system designed with no expansion valves, no capillary tubes, and no float valves for refrigerant flow control. It does have, however, an adjustable refrigerant metering device. This unit pulled down from room temperature to –140 F in 2 hours and cycled at 15 minutes on and 20 minutes off. Compressors are enclosed in the unit and the whole assembly is mounted on a skid for easy handling. Built into the system is provision for the F-13 stand-by pressures so that in the event of power failure or equipment shutdown no refrigerant is bled off or lost. Similar equipment is being built by the Conrad organization for refrigeration contractors in various locations who may need such units to satisfy the requirements of their customers.

tomer and the contractor.

"3. The universal adoption of the five-year plan will be of no benefit to the manufacturer, and only the originators of the idea may benefit for a short period of time. When these benefits disappear another manufacturer may step forward with a ten-year or fifteen-year plan, again causing the industry to follow suit.

"4. The return of defective parts to the manufacturers seems to create ill feeling between them and the contractor.

"It is our contention that the warranty period should be lowered rather than raised and the maximum warranty period set at 90 days. This should result in a lower cost to the contractor who, in turn, could pass on this saving to the customer."

DALLAS SAYS PRESENT CODES ARE ADEQUATE

The city of Dallas, Tex., has rejected a safety code based on the ASA-B9 Safety Code for Mechanical Refrigeration, submitted by the Dallas chapter of the Refrigeration Service Engineers Society.

Explaining the action, the city building inspector said that regulations now in the plumbing, electrical and building code provide all coverage necessary on installations.

However, he agreed that the safety factor called for in the petition is desirable and promised to cooperate fully with the refrigeration service men. He said he would send letters to firms concerned, advising them of current regulations and that a permit is needed before any installations are started.

Cooperation also was promised by the city electrical inspector. He added, however, that his staff is current short-handed by that one man is making inspections on atmospheric towers.

R. J. Sexton, of Advance Refrigeration Service, and a member of RSES, said the petition was submitted because RSES members, "knowing that the city has now reached 500,000 population without any known fatal refrigeration accidents, thought the time at hand to have this ordinance enacted to help keep this good record by having an examination for refrigeration men and proper inspection of the many new jobs now being haphazardly installed."

MFRS. CAN SET PRICING FOR WARRANTY SERVICE

A special regulation added to Ceiling Price Regulation 34 now permits a manufacturer who introduces a new product or a new model of an existing product to apply for a ceiling price for the new wholesale labor warranty service to be furnished with the sale of this commodity.

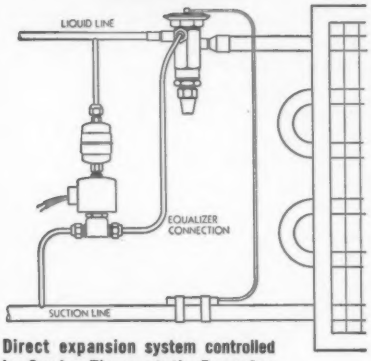
This action, which became effective April 28, will relieve individual retailers and distributors from filing requests for ceiling prices to cover these new warranty services, when they are handled by central service stations.

The new supplementary regulation —No. 16—only applies where the manufacturer has customarily set or proposed uniform prices which were uniformly adopted throughout the United States for its wholesale labor warranty arrangements.

Wholesale labor warranty arrangements refer to situations where the manufacturer has relieved the individual dealer of responsibility for

Only Sporlan *gives you* PEAK PERFORMANCE *on* ALL SYSTEMS

both DIRECT EXPANSION *and* FLOODED



Direct expansion system controlled by Sporlan Thermostatic Expansion Valve and 171 Solenoid Pilot Control.

On direct expansion systems . . . from comfort cooling to minus 100° F. engineers everywhere agree that for Peak Performance, it's Sporlan Right Down the Line. Why? . . . because only Sporlan offers you these time tested features.

Direct acting Thermostatic Expansion Valves from ½ to 100 tons Freon-12.

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- **C** Charge for suction temperatures above zero
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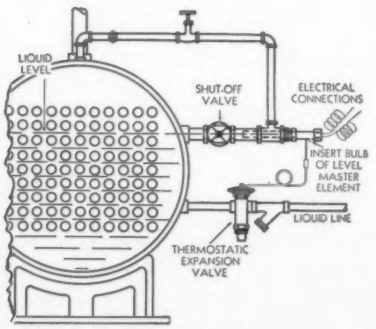
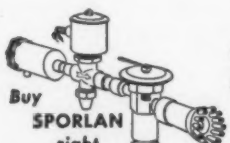
- **G** Charge with Flow-Master Element reduces hunting on comfort cooling systems.



Flooded system of horizontal shell and tube type with Sporlan Level-Master Control.

On flooded systems . . . Sporlan has answered engineers' demands for Peak Performance with the Sporlan Level-Master Control. It consists of a conventional Thermostatic Expansion Valve equipped with the new Level-Master Element, which combines the liquid level control and the expansion device into one unit. The Level-Master Control provides a modulated flow and maintains practically a static liquid level in the low side. If the liquid level drops, a heater element in the insert bulb acts as an artificial superheat increasing the pressure in the thermostatic element, thereby opening the valve. If the liquid level rises, its refrigerating effect on the insert bulb overcomes the heater and the valve throttles.

On your next direct expansion or flooded job . . .
Be Sure with Sporlan!



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warranty service and has turned over this service to a central servicing station or organization.

To take advantage of the new rule, the manufacturer must apply for the uniform ceiling price and cannot put that price into effect until he gets specific approval by the Office of Price Stabilization. Ceiling prices for these warranty services must be in line with the level of ceiling prices established by CPR 34.

COAST CONTRACTORS' COMMITTEES APPOINTED

Don Kissell, president of the Refrigeration and Air Conditioning Contractors Association of Southern California, Inc., Los Angeles, recently announced the complete list of committee appointments for 1952. They include:

Joint apprenticeship committee: Henry B. Ely, chairman; Charles Walling, Neil Templin, Bill Robinson. Alternates: Herb Shook, Robert Noll.

Membership: Bob Savage, chairman; Hays Cory, Fred Schimmel. Attendance: Jim Armstrong, Dale Messimer, Jr., Ed Fettis.

Joint conference board: Henry B. Ely, chairman; Frank Parks, Robert Noll, Hays Cory. Alternates: Verne Zimmerman, Bill Jennings, Bill Robinson, Charles Walling. Delegates to Construction Employers' Council: Henry B. Ely, Neil Templin.

Job relations committee: Henry B. Ely, Charles Walling, Bill Jennings, Bill Robinson. Alternates: Ralph Manns, Vincent Gessel. B-9 Code committee: Frank Parks, Hal Crumley, Hays Cory.

Gas air conditioning: Ralph Manns, Hal Crumley, Frank Parks. Legislation: Bill Robinson. Committee on consideration of dues: Felix Hieatt, chairman; Robert Noll, Bob Savage, W. R. H. Eby.

THORNDIKE IS GUILD'S '51 "MAN OF THE YEAR"

K. B. (Spike) Thorndike, vice president of Detroit Lubricator Co., named "Man of the Year" for 1951 by the Refrigeration and Air Conditioning Guild, Inc., of New York City. He was presented with a plaque designating him for this honor at the Guild's annual dinner-dance May 24 at the Park-Sheraton Hotel.

The Guild cited Thorndike as a man who "by his leadership, progressive thinking and unselfish service has made an outstanding contribution to the Refrigeration and Air Conditioning Industry."

Thorndike, a charter member and one of the original directors of Refrigeration Equipment Manufacturers Association, has served REMA as secretary, vice president, and president. He was chairman of the first post-war All-Industry Show, held in Cleveland in 1946. He is presently chairman of REMA's wholesaler relations committee.

Selection of the "man of the year" was made by a committee composed of Theodore A. Reina, chairman; Robert A. Towse, John Santoro, and Joseph F. Azara. Reina, Towse and Santoro are past presidents of the Guild, and Azara is the current president of the organization.

HERMETIC REBUILDING PLANT OPENED IN NEW ENGLAND

REBUILDING HERMETIC UNITS is the exclusive business of the new factory recently opened in Danvers, Mass., by Stewart & Prince, Inc. It is said to be the first complete hermetic rebuilding plant to be opened in New England. The plant includes modern test and repair equipment for hermetics, plus a complete motor repair shop, with all test and repair areas air conditioned. The company offers pick-up and delivery service covering most of the New England territory, plus one-year guarantee on rebuild equipment. J. B. Prince is general manager.

BURGE ICE MACHINE MARKS 50TH YEAR

Burge Ice Machinery Co., Chicago, a pioneer contracting firm in the field of mechanical refrigeration and a distributor of Baker Ice Machine Co. (now Baker Refrigeration Corp.) equipment since 1908, is this year celebrating its fiftieth year in business. The company was founded by E. H. Burge in 1902.

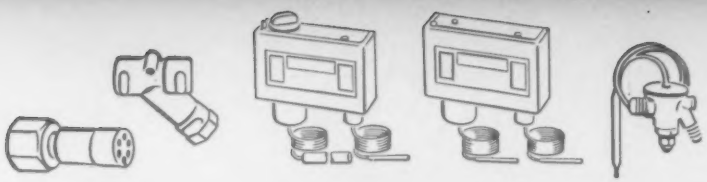
Burge since 1908 has been distributor of Baker equipment in the states of Illinois, Indiana, Michigan and Wisconsin. Most of its early sales were to meat markets, dairies, and fish companies. Later on, through arrangement with Chicago hotel supply houses, the company sold equipment to hotels all over the United States.

Some of the company's outstanding Baker equipment installations include: the restaurants in Chicago's Merchandise Mart, the world's largest building; Booth Fisheries; Swift & Co.; Armour & Co.; Wilson & Co.; in the meat packing field; and Kraft Cheese Co.; with which the Burge organization has worked throughout the period of its founding and growth.

Burge only recently completed a cold storage plant installation for Continental Freezer Co., Chicago, in which approximately 1000 hp. of equipment is used to hold temperatures of —10 F and —20 F in an area totaling 2,756,000 cu. ft. of storage, plus all-year air conditioning for the company's offices.

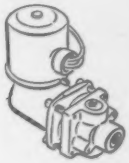
NO. CALIF. CONTRACTORS NOW IN NEW LOCATION

The Refrigeration Contractors Association of Northern California has recently moved its headquarters to a new location at 449 Turk St., Room 24, San Francisco 2. E. D. Flynn is executive vice president of the organization.



General Controls

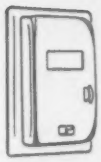
FOR REFRIGERATION AND AIR CONDITIONING



V-200 SERIES

SIX VALVES IN ONE!

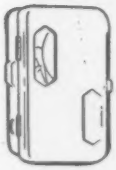
Thermostatic Expansion Valves...For High or Low Temperature Application

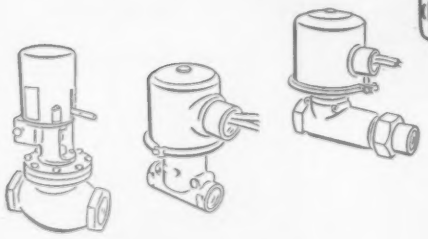


FREON

METHYL-CHLORIDE

SULPHUR DIOXIDE





V-200 Valves control the flow of liquid refrigerants into cooling units. Positive in shut-off, they are simple in design and respond to the slightest temperature changes. Adjustable orifice cartridge makes it possible for these valves to be adjusted to any one of six capacities, without interchanging the valve itself. Semi-liquid charged, V-200's operate on high or low back pressure and corresponding temperatures and are available in ½, 1, 2, 3½ and 5 ton capacities.

GENERAL CONTROLS

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Manufacturers of Automatic Pressure, Temperature, Level and Flow Controls

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DISTRIBUTORS IN PRINCIPAL CITIES

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THE PRACTICAL REFRIGERATION APPLICATIONS MANUAL

Readers are invited to submit their problems to this department. Each letter of inquiry will be answered personally by the author. The most interesting ones will be published in these columns. All problems should be clearly and completely stated and addressed to: COMMERCIAL REFRIGERATION, Manual Dept., 1240 Ontario St., Cleveland 13, Ohio.

PROBLEM

"I WORK for a water cooler company and we have a job in a photographer's studio.

"This job has two cooling coils, each coil of continuous run tubing 5/16 O.D. Each coil of 60 feet is spot soldered to a frame and placed in a tank, each tank containing 40 gallons of water.

"A Detroit automatic expansion valve is on the No. 1 coil farthest from the compressing unit. This valve is set at 10 pounds.

"No. 1 coil is run through a wall to No. 2 coil, then to a 1/3 hp 2-cylinder compressor unit, using methyl chloride refrigerant.

"This job was put in two years ago and according to the photographer has run within 2 degrees—that is No. 1 tank was 2 degrees colder than the No. 2 tank, which was satisfactory. Their water must be held close to 68 F.

"I got a noisy complaint and changed compressors. Then a call-back of 'not cooling' was received. In checking the compressor I found the valves of the compressor bad and again replaced the compressor. I then got a call-back with the complaint that the water in the No. 1 tank was 32 F and the water in the No. 2 tank 74 F.

"The thermostatic control is in the No. 2 tank. I replaced the condenser and expansion valve, blew out the lines, and checked fittings for frost pinches or collapsed tubing. All were OK.

"The compressor now runs and cools the No. 1 tank to 60 F but very little refrigeration is in the No. 2 tank. At times the No. 1 tank is 60 F and the No. 2 tank is 72 F after about one hour running.

"I drained the water from both tanks. In half an hour both coils were cool enough to shut off the compressor. I added gas to the unit to a head of 150 pounds without water in the tanks. As I put water in the tanks to proper level the head pressure went to 240 pounds, forcing me to purge back to 150 pounds.

"The complaint is that the No. 1 tank gets too cold and the No. 2 tank not cold enough.

"The company I work for has a standard stock of supplies. It has no thermostatic expansion valves and does not want to buy any. The company rents these coolers out, supplying parts and service for rental price.

"I have thought of putting an expansion valve on each coil and teeing them in, but will shutting off one tank and setting valve stay at same setting when both coils are running, or will the settings change by both running?

"The coils run on two sides and bottom of length of tank, none on the width of tank.

"Can you give me any information that will help me to get these tanks to hold at nearly uniform temperatures?"

SOLUTION

WE HAVE carefully considered the problem you are having with the two water tanks used in a photographer's studio. As this job operated for two years, holding temperatures within two degrees of the desired temperature during this time, it was probably carefully designed to function as installed.

The principal objection to this type of an installation is that it can quickly get out of adjustment and sometimes present considerable difficulty in getting it readjusted to operate properly. A change in the use of either tank could also tend to throw the temperatures out of balance.

We can readily understand that this is a relatively inexpensive in-

stallation, and this may have been a large factor in the original sale. However, if the need for holding temperatures of the water at 68 F, is important to the photographer we can recommend a change in this installation which, while necessitating the addition of several accessory items, would assure the photographer that he could hold his temperatures in both tanks as needed.

Here is what we would suggest you do to effect this change.

Run a liquid line to number 1 tank with a branch liquid line teed off running to number 2 tank. Place a solenoid valve on each liquid line just before it enters the tank. Install a small thermostatic expansion valve on each line where it is connected to the coil inside the tank. Attach the thermal bulbs to the suction lines, within the tank, but out of the water, or immediately after leaving the tank.

The suction line should be run the same as the liquid line—that is, the main suction line to one tank with a branch-off suction line to the other tank. The expansion valves can be adjusted to hold the frost line at the thermal bulb.

Use two thermostatic controls with thermal bulbs, one with each tank. These bulbs should be placed in the water bath. Wire each thermostat to the solenoid valve controlling the flow of liquid to the tank involved. Use a low temperature control on the condensing unit, adjusted to a range within the operational limits required for holding the desired temperatures.

With this suggested installation, each tank will operate for the desired temperatures entirely separate from the other. The water warming up in the tank will cause the thermostat to close its contacts, energizing the solenoid valve which then will open and allow liquid to flow into the tank. This will build up pressure in the coil and suction line which in turn will cause the low pressure switch on the compressor to close contacts and start the compressor.

When the temperature in the tank is lowered to the desired setting, the thermostat switch contacts will open and the current will cut off to the solenoid, closing the valve. This will stop the flow of liquid to the tank, and the compressor will pump down and stop when control on low pressure switch is opened cutting off the current.

As you can readily determine, each tank will then operate independently of the other and refrigeration will take place when needed in each tank either at the same time or separately. As waste in refrigeration efficiency is present in an installation such as you described, this suggested change might quite possibly result in operational cost savings which would pay for the cost of the added control items used with such an installation.

KOL-FLO CHILLERS GO TO ARABIAN PALACE

Two 75-hp water chillers were recently completed for the government of Saudi, Arabia, by the Kol-Flo Co., Bayonne, N. J., it was announced by John E. Kostura, president of the company. They were manufactured to the special order of Crown Prince Ibn Saud of Saudi, Arabia, for use in the royal palace at Rivadh, capital of the "oil kingdom."

The two units represent 55 tons of refrigeration each. Capacity of each cooler is 165 gallons per minute or 9,900 gph.

Crown Prince Saud's Nasriyadh palace in Saudi, Arabia, where the cooling units will be located is the center of the richest oil country in the world. The potential oil reserves of Saudi, Arabia are estimated at 15 billion barrels, or more than half the entire United States oil reserve.

These two were the first of a large order of water coolers produced for the Saudi Arab government by the Kol-Flo company.

INSTITUTIONS . . .

Continued from page 40

nurseries, premature baby rooms, heart exercise test rooms, metabolism test rooms, static therapy rooms, heliotherapy rooms, fluoroscopic and X-ray rooms, bronchoscopic and examination rooms, anesthesia rooms, drug departments, laboratories, dental clinics, allergy rooms, clinic assembly, and class rooms.

Many applications of this type represent in themselves sizeable installations running into considerable money. Quite often hospitals will buy air conditioning for one or more of these applications at a time, later adding air conditioning for the others as the opportunity presents itself.

In addition to these specialized applications, of course, many hospitals provide air conditioning for strictly comfort purposes in lobbies and reception rooms, recreation and rest rooms, diet kitchens, dormitories, staff lounges, and executive offices.

By making it possible to keep hospital windows and doors closed, air conditioning not only reduces dirt and drafts but minimizes the chance for shock due to wide or rapid temperature changes.

Many physicians agree that outside air filtered and introduced through the air conditioning system helps to remove medical odors and lessen pollen infiltration, thus benefitting the patient by stimulating respiration and appetite, increase elimination, and reduce cases of irritation.

Air conditioning also can help hospitals pare their overhead by reducing cleaning and decorating expense and helping to keep walls, floors, linens, fixtures, furnishings, drapes, and similar items clean. All of these things are major factors in the expenses of any such institution.

Air conditioning is a sound and profitable investment for any hospital, because no other place has so great a need from a health standpoint to assure proper comfort and scientific care of a patient. As a result, many hospitals have found it possible to make the equipment pay for itself and actually yield a profit on their investment.

Don't forget, in dealing with hospitals, that hospitals are business institutions. While they have a definite and positive need for air conditioning they also must be able to justify it in terms of increased benefits and revenue as balanced against both initial and operating costs.

Whether you are selling new equipment, or replacing old equipment, a complete analysis of the cost involved and the benefits offered should be tabulated and submitted along with the sales proposal. This not only enables the hospital management to make an intelligent evaluation of the proposed equipment purchase, but it

BANKS

Considered from any angle, modern air conditioning is proving to be a valuable asset to banking establishments of all types and sizes.

Typical is the case of one New York bank which found, after installing air conditioning equipment, that even in the hottest weather business now goes on without any discomfort to either patrons or employees, where-

WHAT IS BELIEVED to be one of the largest sales of packaged air conditioning equipment ever made to an industrial user is announced by United States Air Conditioning Corp., which reports that the Piasecki Helicopter Corp. of Morton, Pa., has contracted for the purchase of 10 usAIRco "Refrigerated Kooler-aire" units totaling 390 tons of cooling capacity.

The air conditioning installation, which is expected to be completed by this summer, will provide cooling for eight divisions of the Piasecki plant, which is now handling more than $100,000,000 in defense orders. The areas to be conditioned include the tool design, tool and equipment control, purchasing, accounting, engineering, drafting, cafeteria and reproduction departments.

The system, as designed by Charles S. Leopold, consulting engineer, in conjunction with J. E. Weber, plant facilities supervisor, and W. F. Schwartz, plant engineer of Piasecki, specifies nine 40-ton RK units and one 30-ton unit.

as formerly it was not uncommon to close the bank early in the afternoon because of the heat.

This bank also found that employee absenteeism was held to a minimum, with none of the common summer ailments reported. Control of humidity in the bank's vault has been of immeasurable help in protecting the important documents and other valuables stored there.

Furthermore, bank officials report that they no longer experience the customary summer slump in employee efficiency, and they feel that the air conditioning has added definitely to the institution's prestige.

Probably the most important of all these benefits is the matter of employee efficiency. In banking, of all businesses, extreme accuracy and freedom from error is of utmost importance.

A test conducted in a bank in a large eastern city revealed a definite falling off of employee efficiency when temperatures rose above 70 F. Actually 50% more errors were recorded at 90 F than at 68 F, a fact which medical authorities attributed to the fact that at these high temperatures the blood supply of employees was being shunted off from their brains in order to cool their skin.

Banks, like any other establishments, find that air conditioning benefits them by minimizing circulation of dirt and dust and thereby cutting cleaning and redecorating bills. They also find that the maintenance of uniform atmospheric conditions helps prolong the life of the many types of intricate machinery and equipment which they use, preventing damage from expansion, contraction, corrosion, or dehydration.

Banks should be particularly good prospects for air conditioning, because in addition to receiving all the physical benefits accruing from air conditioning, they are continually being asked to finance the purchase of such equipment by other business men in their communities. Obviously, banks would be more receptive to such loans if they themselves became accustomed to the advantages of air conditioning.

On the other hand, other business men who might be "on the fence" regarding the purchase of air conditioning equipment for their own establishments might be swung over by having their attention called to the fact that, if the banks think air conditioning is a good investment, it probably is one.

There's always one that's better... and in controls it's Ranco!

Ranco controls are the most popular in the Refrigeration Industry. More than 35,000,000 Ranco controls are in use throughout the world. Whether your job involves domestic or commercial refrigeration, remember this . . . Ranco controls are available for over **4,000** replacement installations.

Ranco Inc.

COLUMBUS 1, OHIO

RANCO CONTROLS

WORLD'S LARGEST MANUFACTURERS OF REFRIGERATION CONTROLS

Circle No. 82 on Reader Service Card for more information

HERE'S HOW!

Edited by
Warren W. Farr

Tips on Installing New V-Belts

Installing a new V-belt on a machine is easy enough, but here are a couple of points to remember:

Never install a belt by "rolling" or "snapping" it on. *Always* release the take-up first, and then install the belt.

Also, be sure the belt does not "bottom" in the pulley grooves. Having the belt fit the pulley is as important as having the correct belt length.

There's a mighty good reason why it will pay you to release the take-up before installing any new belt. Laboratory tests have shown that the strain put on the motor, shaft, and bearings when you "roll" or "snap" a belt on is *over 7 times* the load these parts are intended to take.

When you don't release the take-up, "rolling" a belt can cause bent shafts, bearing failures, broken oil and refrigerant seals, and broken or damaged belts. Taking a chance on "rolling" a belt is bad business. Keep your customers satisfied by doing the job right the first time.

I do it this way...

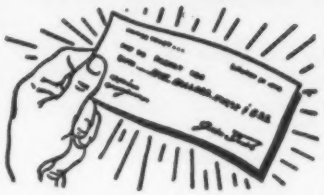
COLOR coding can be a big time-saver for the busy refrigeration serviceman. I use it to advantage both on my gauge hose and in my tool kit.

On the gauge hose, I paint the suction hose end blue, the highside end red, and the other one white.

In my tool kit, I paint the tools I use most frequently in a variety of colors. After using them for a while I have found that I don't even think of looking for a special tool I want, but look instead for the color in which I know it is painted. Tools are much easier to find that way.

Lee M. Johnson, Guthrie, Okla.

WANT TO EARN $5?



You don't have to be a writer or a literary genius! Just jot down some of the shortcuts you've developed in your maintenance or installation work and send them to HERE'S HOW EDITOR, COMMERCIAL REFRIGERATION AND AIR CONDITIONING. Your $5 will be paid promptly when your maintenance tip is published in the magazine. Let's hear from you!

How to Re-Unite Separated Mercury

The separation of the mercury in a thermometer or a thermostat casing leaves most of us with a pretty helpless feeling. But before you decide to throw away the device, or take the time and trouble to send it back to the factory, why not try one or all three of these tricks? They're usually effective in re-uniting the mercury, says Robert Soroka, of Minneapolis-Honeywell Regulator Co.

First, tap the case or thermometer in the palm of your hand, bulb down. If this doesn't work, try centrifugal force by attaching a stout string to the thermometer and swinging it in a circle around your head. Finally, there is the refrigeration technique. This involves placing the thermometer or thermostat casing in the freezing compartment of a refrigerator, where the cold will draw the liquid down into the bulb.

These three tricks are most helpful where the mercury is merely separated near the top of the tube. However, if there is the problem of an air bubble, the refrigeration method usually is the right one to use.

Creating Confidence: Don't Run Down Products

If you want to do a real quick job of ruining the customer's confidence in your ability and judgment, just tell him that the equipment you are being called in to service isn't worth a hoot, and never was.

Maybe it isn't the very best, but that's for you to know and for him to find out. It's very poor policy to tell him about it.

Always say something nice about your customer's equipment, if you can do so at all without making a

I do it this way...

THE other day I had a call at a restaurant that had a 20-foot box with an ice maker coil. The machine was short of F-12 and I located the leak at the liquid line ell leading from the side of the compressor receiver. The ell had a soldered opening and to resolder it was easy, but I found that I had only a small quantity of refrigerant with me.

Time, on this job, was of the essence, so I hooked the condenser outlet to the liquid line by means of a quarter-to-quarter flare union and charged the machine until I had the valve sealed off with liquid. I then removed the receiver to my shop for soldering.

When I returned the next evening to replace the receiver, the machine was working fine. This is an idea which should be used only as a temporary expedient, but it can be used to advantage when you are caught short as I was.

Harold J. Huber, Bothell, Wash.

senior-grade Ananias out of yourself.

Praising the equipment substantiates the customer's feeling that he showed good judgment when he bought it—and he'll admire your intelligence in recognizing his judgment.

Open Thermostat Spells Water Cooler Trouble

When you are called upon to service a water cooler, and find the thermostat open, it's usually not too tough to locate the trouble if you go about searching for it in a methodical way.

Here are a few things to check for. Chances are the open thermostat will be due to one of these causes:

1. Shorted fan motor. Remedy: replace the fan motor.

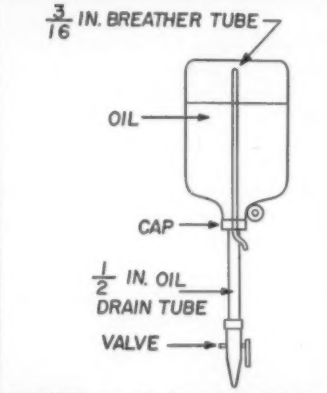
2. Shorted compressor stator. Remedy: replace the unit.

3. Shorted capacitor. Remedy: replace the capacitor, after first discharging it by placing a screwdriver blade across the terminals.

4. Shorted transformer. Remedy: replace the transformer.

5. Probable cycling on starting winding. Remedy: replace and check the voltage.

I do it this way...



HERE is a simple and quick way to fill squirt cans without spilling oil all over the place and making a mess.

Solder a piece of ½" tubing to a gallon jug cap; also solder a breather tube (3/16") inside of this tube bringing it out through the side of the oil tube and long enough to extend to the bottom of the jug. Place a small valve on the opposite end. Screw the cap in place, and swing the jug upside down on the wall someplace where it will be handy.

We mounted this assembly in our shop between two boards 1" x 7" x 14" which we fastened to the wall edgewise. A ½" hole was bored through these boards 4½" from the back and 1" from the bottom end, and a dowel run through the holes. This dowel passes through the finger hole in the jug and holds it in place. The jug is easily removed for refilling by mounting in this manner.

Dale Pride, Tulsa, Okla.

How to Line Up V-Belt Drives

In any V-belt drive, keeping the pulley grooves in a straight line with each other is very important to the life of the belt. If one or both of the pulleys are crooked, both belt and pulleys wear out faster.

Always check to see first whether the pulleys are out of line, and second to see whether the shafts are out of line. By making certain that pulleys are properly aligned you give your customer more for his money in the form of better service from his machine.

After you have aligned the pulleys, put the belt in the pulley grooves and, if possible, sight down the top of the belt from slightly above it. Make sure the line of the belt is straight and doesn't bend where it leaves the pulley.

When it is impossible to sight down the drive, place a straight-edge against the two pulleys. If the ruler is flush against the pulley sides, you can be reasonably sure that the drive is aligned correctly.

What Causes Dirt and Sludge in Some Systems?

Question: What causes the large quantities of dirt, and sludge in a system that has been changed from sulphur dioxide to F-12?

Answer: Lack of care in thoroughly cleaning the sulphur system before the change was made. Sulphur systems usually contain carbon from oil that has broken down at high temperature, and various forms of sulphur combinations of iron. These are the sources of the dirt.

Freons are good wetting agents and act as cleaners, loosening the deposits of dirt that are normally "crusted" in a sulphur system. Change-over from sulphur dioxide to Freon therefore entails a great deal of careful cleaning before the system is charged with Freon, and put back into operation.

Experience in this type of change-over indicates that it is wise to replace condensers and receivers that cannot be opened up, and thoroughly cleaned. Even after a most thorough cleaning job it is well to install an efficient filter which will trap any remaining foreign material before it can cause trouble.

I do it this way...

SOME thermostats that had been diagnosed as faulty by our service department were repaired simply by dropping a bit of sealing compound on the threads of the differential screw. It seems that on these units the differential screw, by working itself loose, had thrown the thermostat out of adjustment.

I. Greenberg, Brooklyn, N. Y.

NEW METAL-CALS PLANT NOW IN PRODUCTION

Production of Metal-Cals, the permanent, self-adhesive identification device, now is under way in the firm's new plant at Inglewood, Calif., which was opened in February with 50 employees, announces the C & H Supply Co., Boeing Field, Seattle.

Headquarters of the company continue in Seattle where the Metal-Cal was developed by Boeing Airplane Co. It is manufactured under license by C & H for users outside the aircraft industry.

Consisting of a .003" thickness of aluminum foil, backed with a high-tensile strength bonding material, Metal-Cals require no rivets or other fastening devices and may be applied to any smooth, cohesive surface such as metal, glass, porcelain, wood, paint and enamel. The aluminum foil, anodized and dyed, provides a permanent method of applying trade names, diagrams, operating and maintenance instructions, dial and gauge markings, insignia, trade marks and dealer trade names.

COMMERCIAL Refrigerator SALES NEWS

Right "Thinking" Cited as Factor In Progress of the Industry

By John Poth
President, A. C. Wicke Mfg. Co.

THERE is little lacking in our industry from the standpoint of progress but there is one step that is short of what it should be in my opinion, possibly because it is outside the realm of monetary or materialistic values. It is very important to us all and I would like to talk about it as I see it.

What I intend to talk about is our thinking; our thinking in terms of unity and ideals.

I feel our industry has gone through a psychological change in the last five years and we are now ready and eager to accomplish those values that come through co-operation and understanding.

Products Fill a Need

This is an industry that is in close balance with the necessities of life, and I suggest every one associated with it be made to understand that fact. People need the products of our industry to maintain a decent standard of living, and there is no good reason why such products should be distributed on a plane other than that of the highest in decency and ethics; and if it is not that way in any case, something should be done about it immediately and effectively by such authority that might be in command.

Our industry is not only essential but it is indispensable to the well-being of humanity.

To illustrate how true this is, let me use this hypothetical case. Suppose by some freak turn of events, all the facilities and all the products of our industry, including personnel, were suddenly and totally destroyed.

Can you visualize for a moment the inconvenience, the suffering and the losses that would be encountered if such a condition prevailed for a period of 10 days or more? Can you imagine what would happen to our health, our production system, our distribution system and the economic system of our nation, if the facilities of the industry were lost for a period of one year or more?

We must agree the industry has progressed along technological lines at a very rapid rate and here I suggest we ask ourselves this question: Have our ideals kept pace with the rate of the technological progress of our industry?

Too Many "Lone Wolves?"

Another good question might be: Are there too many so-called "lone wolves" in our industry?

Then let us ask: Are we ready to realize the results and the benefits that would come from sharing our problems, our successes, our fears and our apprehensions?

As manufacturers, are we motivated by the highest ideals? Do we strive always to turn out a product of integrity? If only temporarily, would we abandon certain principles and procedures that might be questionable?

As distributors, are we honest with ourselves and with our colleagues? Do we reciprocate the faith the manufacturer places in us?

As salesmen, do we realize our responsibilities to the manufacturer, to the distributor and to the customer? Are we indoctrinated to say what we should say in terms of ethical standards and do we say them accordingly?

Does the service man realize the important function he performs? Is he indoctrinated in such a manner to give all that there is to give in the way of ethical practice?

Regarding the other thousands of people employed in this industry at various levels, are they made to realize the obligation they bear because of the faith placed in them by those who need their goods and services day in and day out?

If our hopes, aspirations, and endeavours can answer "yes" to the questions I have just raised and if we strive as an industry to attain unity, co-operation and mutual respect within our ranks, and if we keep our sights raised to the high level of the reality and promise this industry holds for all of us, we shall then have taken a big step—a most important step—in the way of progress for the year ahead.

Editor's Note: This is a condensation of a speech made by Mr. Poth at the annual NCRSA meeting.

UNI-FRIDGE EXPANDS DEALER ORGANIZATION

In preparation for the introduction of their self-contained freezer panel for cooling walk-in freezers, the Uni-Fridge Corp., Minneapolis, is establishing additional protected dealer territories. The added new dealers will complete their national dealer organization without conflict with existing protected territories according to M. Grow, Uni-Fridge president.

The firm manufactures the Uni-Fridge refrigeration panel, a self-contained refrigeration unit for walk-in coolers; the Uni-Fridge beverage cooler, a self-contained cooler for bottled beverages; and related refrigeration products.

SURVEY OF TRADE-INS COMPILED BY NCRSA

An extensive report on how members handle used equipment taken in trade on the sale of new commercial refrigeration units is being compiled by National Commercial Refrigerator Sales Association.

This analytical report, to be released to members upon completion, will include details of the extent of rebuilding used equipment for resale, methods employed to sell this rebuilt equipment, compensation allowed salesmen, and other significant factors.

In summation, the report will pro-

vide figures on the extent of this phase of distributors' business and show whether it is operated at a profit or a loss.

PRICE CUTTING DANGERS CITED IN LEAFLET

The serious threat to business economy in general—and to the dealer's survival in particular—when prices are cut even as little as 10% is emphasized in a leaflet issued recently by National Commercial Refrigerator Sales Association.

Examples, based on the average cost of operation as shown in the Association's overhead expense report, point out the loss of business capital (a loss over and above profit) which is sustained when prices are cut 10, 15, or 20%.

Copies of this leaflet may be obtained by writing directly to the Association's headquarters at 1900 Arch St., Philadelphia 3, Pa.

MIDWEST WILL MARKET SELF-CONTAINED LINE

Midwest Mfg. Co., Minneapolis, manufacturer of "Chill" walk-in coolers and refrigerators, will soon market a self-contained unit to be available in three sizes—1/3, ½ and ¾ hp, according to Robert F. Stupp, general manager.

Stupp also announced that Clarence E. Nord, formerly with United Refrigerator Mfg. Co., Minneapolis, has been appointed superintendent, and that additional machinery, including a drum sanding operation, has been installed at the factory.

The new unit, the company said,

COOLING PLANT FOR NEW GOVERNMENT BUILDING

HEART OF THE mammoth air conditioning system in Washington's largest government office building, the new General Accounting Office building, are these four 1000 hp York turbo compressors daily handling 12,096,000 gallons of recirculated water. According to Gilbert Stanley Underwood, the supervising architect, the GAO building was made possible only by air conditioning.

will have an expansion valve and control mounted on an insulated wood panel. Cooler will be of kiln-dried Douglas fir, 1 x 4 flooring with gasketed joints, and the "Lockseam" system of connection. Sizes will be standard at 6′ x 6′ x 6′6″ and 6′ x 8′ x 6′6″.

SUB-ZERO PRODUCTS ADDS 3 DISTRIBUTORS

Appointment of three new representatives is announced by Sub-Zero Products, Cincinnati manufacturer of industrial chilling units. The George Keller Machinery Co., 1807 Elmwood Ave., Buffalo, has been appointed to represent Sub-Zero in western New York state. Rochester will be served by J. Walter McCloy, 414 Reynolds Arcade Building, who is associated with the Keller Co.

Dixie Mill Supply Co., Tchoupitoulast & St. Joseph St., New Orleans, will represent Sub-Zero in southern Louisiana, Alabama, and Mississippi.

In eastern and northern Ohio, Sub-Zero will be represented by Cleveland Duplex Machinery Co., Inc., Penton Building, W. 3rd and Lakeside Aves.

SPECIALISTS TO WORK WITH FREEZER DEALERS

Appointment of two sales specialists to work nationally with distributors and dealers on promotion and merchandising activities has been announced by Ben G. Sanderson, general sales manager of Deepfreeze.

Richard B. Stranahan and William G. Alles, veterans of the major appliance business and long experienced in wholesale and retail sales, have been appointed to the newly created posts.

The specialists will work in the field with distributors holding meetings for their sales personnel, conducting dealer meetings and establishing new outlets.

WILSON REFRIGERATION, INC. OFFICE ADDRESS CHANGED

Wilson Refrigeration, Inc., announces that it now is occupying new offices and display room, constructed for a more efficient and centralized operation, at its plant location on Glenwood Ave., in Smyrna, Del.

ABOUT PEOPLE . . .

Continued from page 82

Scott H. Patterson has been appointed branch manager of American Brass Co.'s Buffalo, N. Y. plant. Since 1950, Patterson has been New York City district sales manager. He joined the Buffalo branch of American Brass in 1927. He returns to Buffalo to take over the duties of Justice Lockwood, who was recently appointed vice president in charge of sales for the entire company.

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Three additions to their staff of sales engineers have been announced by Bush Mfg. Co. of West Hartford, Conn., and Heat-X-Changer Co. of Brewster, N. Y. **Carl Gaebel** will cover the St. Louis area, including southern Illinois, western Kentucky, and Kansas, in addition to Missouri. **R. A. Malarkey** will make his headquarters in Philadelphia and cover southern New Jersey, eastern Pennsylvania, and Delaware. **R. M. Carberry** will cover the Dayton area, including Columbus and Cincinnati, Ohio, as well as portions of Indiana, Kentucky, and West Virginia. Gaebel has long been identified with the contracting business in the midwestern area. Malarkey has been a refrigeration engineer for several leading eastern wholesalers, and also has worked in the factories of both Bush and Heat-X-Changer as a sales application engineer. Carberry formerly was export manager of Peerless of America.

•

Traulsen and Co., Inc., manufacturer of stainless steel commercial refrigerators and freezers, has announced the appointment of **Frank H. Broomfield** as sales manager. He will be in charge of developing an advertising and sales promotion program. Broomfield formerly was sales promotion manager of the A. Kimball Co., New York.

Herbert E. Smith and **William Bynum** have been added to the board of directors of Carrier Corp., increasing the board members to twelve. Smith is a director and member of the finance committee of United States Rubber Co., and former chairman of the company's board of directors. Bynum is executive vice president of Carrier.

•

William T. Harris, who has been employed by York Corp. since 1936, has been named assistant to the district commercial sales manager of the firm's southern district with headquarters at Atlanta, Ga. Harris succeeds A. H. Johnston, who resigned recently to become affiliated with Pittman-Singleton, Inc., York distributor in Fayetteville, N. C. His territory will include the states of Georgia, Florida, South Carolina, North Carolina, Alabama, Tennessee and Kentucky.

Super Market Chooses the "Series 50" for Wide-Range Storage Requirements

The newest store in Wrigley's Detroit super market chain is a model of food protection efficiency. Of special interest in this store are the cold storage doors. Constructed of Marine plywood—in which the plies are bonded together into an integral unit by a synthetic resin adhesive, hot pressed and tempered after setting —the doors are completely waterproof, bacteria-proof and fungi-proof!

Wrigley's chose the Jamison "Series 50" because it was the only door designed to withstand severe super market use as well as affording the optimum in sanitation.

Track Door speeds movement of meat and other perishables in and out of storage room. Equipped with the exclusive Jamison "Adjustoflex" Track Port Opener, foolproof operation and tight seal of door are assured when door is closed. E-Z-Open two point fasteners maintain a uniformly tight seal.

JAMISON

HAGERSTOWN, MARYLAND, U. S. A.

The oldest and largest builder of insulated doors in the world

Circle No. 89 on Reader Service Card for more information

Good to the last Drip

Eastern hot CONDENSATE DISPOSAL UNIT

Automatically removes hot condensate from air conditioning units . . . .

This completely automatic unit disposes of hot liquid condensate at temperatures up to 200-210F. It's easily installed in air conditioning, or similar systems, where normal gravity drain-off is not possible. Quiet and reliable, it requires no oiling or maintenance during its long life. Low operating cost and rust proof construction make this compact and rugged unit a worthy investment in convenience. Complete catalog material on request.

SPECIFICATIONS

TANK: Capacity — Approximately 0.8 gallons. Brass with black enamel outside.

PUMP: Bronze centrifugal pump. Delivery approximately 4½ GPM at O PSI and shut off of 12½ PSI.

MOTOR: 1/40 HP, 3450 RPM, single phase, 60 cycles, 115 volt, totally enclosed, ball bearing, capacitor start motor.

WEIGHT: 23 pounds.

CONTROL: A switch, operated by a float, is so set that the pump will pump out approximately 0.4 gallons of condensate at each operation. A check valve built into the outlet prevents the outlet line draining back into the tank.

WIRING: The unit is provided with a knockout hole for attachment of BX Cable for the motor. All wiring is enclosed in unit.

Eastern INDUSTRIES, INC.

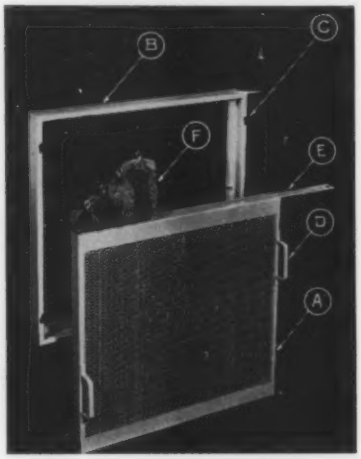
296 ELM STREET, NEW HAVEN, CONNECTICUT

Circle No. 90 on Reader Service Card for more information

BRUSH FILTERS DEVELOPED BY BRITISH COMPANY

Simplicity of maintenance is an outstanding feature claimed for the new E.V. Type Multi-Brush Air Filters, developed and manufactured by Heather Filters Ltd., 28 St. James's Place, London, S. W. 1. These filters employ as the filtering element a series of brushes which present a screen of finely graded intermingling hairs to intercept and trap dust from the air in its passage through the filter.

The material used in the manufacture of the filter brushes is specially selected to ensure maximum durability and efficiency, and to withstand the varying humidity and other air conditions. Even if the dust is impregnated with oil it will in no way impair the efficiency of the filter.



Brushes can rapidly be removed from the filter panel for cleansing. The procedure is to remove the panel (A) from frame (B), in which it is retained against felt packing to ensure air-tightness by the catches (C). These catches are released, the panel is removed by means of handles (D) and the brushes exposed by withdrawing slide (E). The brushes (F) can then be removed from the compartment in which they are housed.

The initial filtering efficiency of the brushes is still retained after cleansing, which is carried out simply by means of a vacuum cleaner when the entrained dusts are dry or, where the dust is of an oily nature, by washing the brushes in warm, soapy water, or detergent solution.

Each filter unit is designed for low resistance to the flow of air and the recommended duty is 1000 c.f.m. at 0.25" w.g., although, where necessary, higher or lower duties may be handled with corresponding increase or decrease in w.g. The units are

manufactured to a standard size, providing singly or in combination a correct filter area for a given air flow in any size air conditioning or ventilation system.

Frames may be designed and manufactured to accommodate any number of filter units, for erection and assembly on the working site. These may be incorporated in a system to present a flat face to the flow of air or, where space is limited, for arrangement in cabinet or "V" formation.

Reduction of noise due to air flow is effected in all applications of these brush filters, as the vibration of the hairs has a sound-absorbing effect. Although designed for dry operation with the main emphasis on efficiency plus simplicity in maintenance, all of these multi-brush filters can be impregnated with oil without loss of efficiency for use where conditions demand a 'wet' or viscous type filter.

Under all conditions of operation brush wear is negligible.

CONSTRUCTION RULES ARE REVISED BY NPA

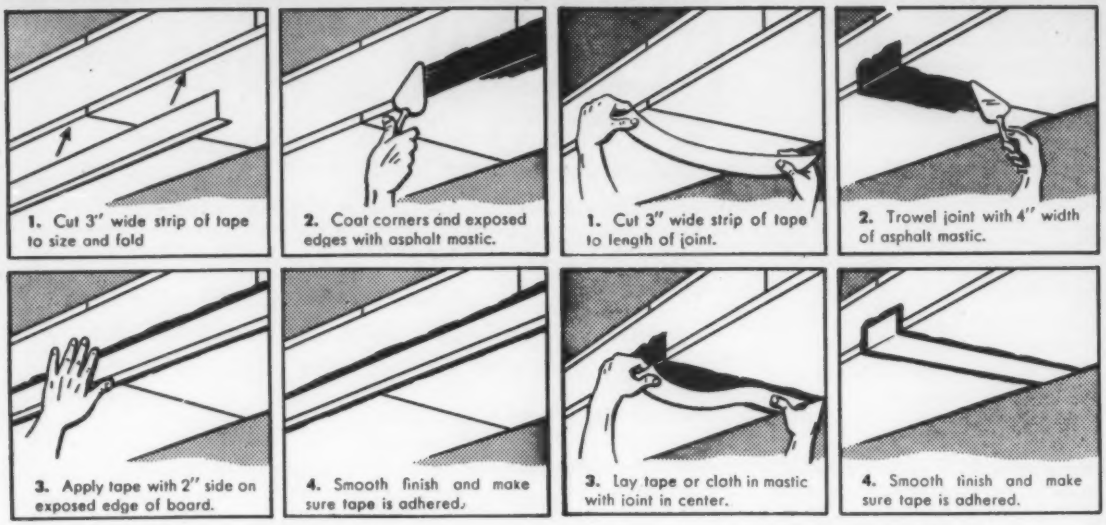
The National Production Authority has again amended its orders relating to priorities for the construction industry. The latest amendments were issued March 6, 1952. The effects of the most recent revisions of the construction regulations are as follows:

Basically, residential construction has been withdrawn from CMP Regulation 6, and is covered in a new order, M-100. The major changes under M-100 are an increase of 500 pounds in the amount of steel that may be self-authorized per housing unit; decreasing by 25 pounds the amount of copper in housing units using copper water systems, and permitting the use of aluminum instead of copper for electrical wiring, on the basis of 1 pound of aluminum to 2 pounds of copper.

Major changes for other construction under CMP Regulation 6 are as follows:

The amount of steel that may be self-authorized for smaller commercial, school and other non-industrial construction is increased, as well as the amount of steel for road and highway building. Foreign and used steel is now permitted. Self-authorization of aluminum instead of copper is allowed on the same basis as for residential construction.

Here Are Recommended Methods of Applying New Duct Insulation



New Fiberglass Duct Insulation Designed to Stop Condensation

Development of Fiberglas vapor-seal duct insulation, designed to prevent condensation of air conditioning ducts which carry cool air in warm, humid areas, has been announced by Owens-Corning Fiberglas Corp.

A serious problem in warm, humid areas has been created by condensation which forms on ducts carrying cool air. The new type material stops condensation by enclosing the duct in thermal insulation having a built-in vapor barrier of asphalt and kraft paper.

Use of insulation alone has not solved condensation problems because vapor tends to pass through insulation and condense on ducts.

Damp insulation, which results from excessive condensation, loses its themal insulating value. Condensation may damage the duct, its exterior finish and even the integral construction of the building.

For example, excessive condensation eventually reaches a water-dripping point. Constant dripping for a sustained period could damage ceilings, floors, wall areas and stock or equipment stored near the dripping point. Use of Fiberglas vapor-seal insulation retards vapor flow and the dangers resulting from condensation.

Fiberglas vapor-seal duct insulation consists of fine fibers of glass, bonded together by a stable resin into a rigid, rectangular insulating board with clean-cut edges. One surface and both ends are covered with asphalt and kraft paper, forming an integral vapor barrier.

The material is furnished in 24 by 48-inch panels and in thicknesses of ¾, 1, 1½ and 2 inches. Vapor-seal duct insulation may be cut easily and accurately to any shape.

The material may be applied to ducts by the same conventional methods used for application of semi-rigid insulation. If screw-and-cap or metal clip methods are used, the vapor barrier is punctured, and sealing of the resulting holes then is necessary. All holes in the vapor barrier must be sealed with a cut-back asphalt mastic. If this is not done properly, the vapor barrier's effectiveness is reduced.

For exposed ducts, a decorative finish is desirable. To prevent asphalt from bleeding through and staining finishes, it is recommended that metal lath and corner beading be attached to the insulation and a plaster finish be applied. The plaster then may be painted.

The insulation also may be painted with an asphalt-base aluminum paint and, if more finish is desired, with lead-base or oil-base paint. It also may be covered with canvas, then painted.

For sealing joints in vapor-seal insulation after application, it is recommended that a heavy trowel coat of a vapor barrier mastic be worked into the joint and carried out two inches on either side to provide the vapor barrier. Strips of open mesh cloth or tape, 3 to 4 inches wide, can be embedded in the asphalt to reinforce joints and prevent parting.

FLORIDA COURT ROOMS TO BE AIR CONDITIONED

A contract to air condition the circuit and criminal court rooms and adjoining judges' chambers of the Polk County Court House, Bartow, Fla., has been awarded to Swartz Co., Lake Wales, Fla., on a base bid of $23,100. The bid included a pledge to complete the work in 55 calendar days.

CROSLEY JOINS ACRMA

Crosley Division of Avco Mfg. Corp., which recently announced its entry into the room air conditioner industry, has become a member of the Air Conditioning and Refrigerating Machinery Association.

OPPORTUNITIES

(Classified Advertising)

Rates: for "Positions Wanted," $4.00 minimum, limit 25 words. For all other classifications, $4.50 minimum for 25 words or under, each additional word 15c; boldface type or all capitals, $7.50 minimum for 25 words or under, each additional word 20c. Box addresses count as five words, other addresses by actual word count. All advertisements in this section are payable in advance.

POSITIONS WANTED

Experienced air conditioning service and installation man is looking for a position somewhere in the Southwest, preferably in Texas. Write Box 6152, Commercial Refrigeration and Air Conditioning.

POSITION AVAILABLE

Man with Refrigeration, Cabinet Design and Sheet Metal experience to assist in the development of low and high temperature refrigeration equipment. New England area. Give record of past employment, references and salary expected. Write Box No. 6252, Commercial Refrigeration and Air Conditioning.

TRAINING AVAILABLE

Course on sealed unit rebuilding trade secrets disclosing exclusive methods for all operations. $12.50 or write for details. H. Custer, Box 98, Center Line, Michigan.

FOR SALE

1 Air Conditioning Unit—General Electric —60-ton capacity—Complete with *All* Accessories, Control Panels, Blowers, Fans, Ducts, Grills, and Piping—Used 12 months —like new—very low price. *Subject to Prior Sale.* F.O.B., Cincinnati, Ohio. HALL EQUIPMENT COMPANY, 7374 Reading Road, Cincinnati 37, Ohio. REdwood 2057.

FOR SALE

Used Air Conditioning Units. (1) G. E. Freon — 12 condenser unit — 2 cylinder; Type CN 103 L381, Model No. 19CM103L-381B; Refrigerant 6, Inst. No. GE 16479-GEJ425; Hi Side 250 lb. sq. in.; Lo Side 180 lb. sq. in.; with (1) G. E. Induction Motor, 25 hp, Model 5 KG 365 GJS, Frame 365—3/60/220-440, Type KG-1765 rpm. Also (1) G. E. Type GM-123N381-4 cylinder; Parts No. 19CM 123 H 381; Inst. No. GE 6479 GEJ 425; Refrigerant Condensing Unit; with (1) G. E. 30 hp Induction Motor, Model 5KG 405 DR-3, Frame 405 3/60/220-440, Type KG-1760 rpm. Both in excellent condition—3 years old. F.O.B. Cincinnati, Ohio. Subject to Prior Sale. Hall Equipment Company, 7374 Reading Road, Cincinnati 37, Ohio, REdwood 2057.

POSITION AVAILABLE

National Service Manager for rapidly growing package air conditioning manufacturer. Familiarity with manufacturer-distributor-dealer-user service procedures essential. Applicable mechanical training or experience desirable. Write Box 6352, Commercial Refrigeration and Air Conditioning.

BUSINESS OPPORTUNITIES

REFRIGERATION—RESTAURANT EQUIPMENT

Sales $87,000 year; franchise many well known lines; fully equipped sales room; 5 commission salesmen; bldg. included; large Ohio city; price reasonable. Apple Company, Brokers, Cleveland, Ohio.

BUSINESS OPPORTUNITIES

REFRIGERATION SALES—SERVICE

Sales $100,000 year. Franchise home-commercial refrigeration, air conditioning, heating, appliances, television. Attractive store, Ohio town, modern equipped, priced reasonable. Apple Company, Brokers, Cleveland, Ohio.

BALTIMORE AIRCOIL CO NAMES EXPORT AGENCY

Joseph Miller, 11 Broadway, New York City, has been appointed exclusive export distributor (except in the Dominion of Canada) for Baltimore Aircoil Co.'s line of evaporative condensers and cooling towers, according to R. W. Pentecost, BAC's general sales manager.

NAMED REPRESENTATIVE

The Cleaver-Brooks Co. of Milwaukee announces the appointment of E. C. Giberson of Des Moines, Iowa, as a manufacturer's representative for the sale of Cleaver-Brooks boiler equipment.

The firm is located at 3719 Center St., in Des Moines.

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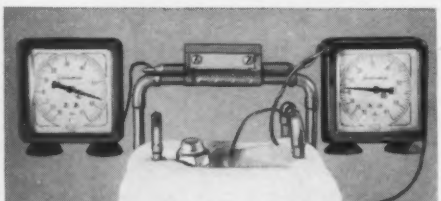
Liquid-charged expansion valves give you positive bulb control IN ANY POSITION

Here's Proof



Dramatic proof of the efficiency of A-P Liquid-Charge. In the unit pictured above, there is a 54-degree temperature difference between valve and bulb, *and the valve is mounted upside down!* Despite these conditions, the bulb provides perfect control. Unusual? Yes; but typical of the efficiency and dependability you can expect from A-P Liquid-Charged Valves!

Here's an all-purpose valve serving every requirement . . . low temperature units, commercial applications, air conditioning. Select the capacity you need, install . . . and enjoy day-in, day-out dependable service.

Unusual applications are no problem when you install an A-P Liquid-Charged Expansion Valve. Install it upside down . . . at any angle . . . even lower than the bulb — in fact, in absolutely *any* required position, and in *any* ambient temperature. You are sure to get positive, precise control.

Manufactured to the highest standards of quality, every A-P valve has a rugged, leakproof, forged brass body and corrosion-resistant, stainless steel needle and seat. Power element is liquid-charged and all parts are silver soldered for durability. Yes, quality construction throughout to assure years of economical, trouble-free service.

Every A-P valve is designed for original equipment or for replacement service. Get the full story. Write today for Bulletin R-16.

DEPENDABLE Controls

A-P CONTROLS CORPORATION
(formerly Automatic Products Company)
2486 N. 32nd Street • Milwaukee 45, Wis.
In Canada: A-P Controls Corporation Ltd., Cooksville, Ont.

Stocked and Sold By Good Refrigeration Wholesalers Everywhere • Recommended and Installed By Leading Refrigeration Service Engineers

Circle No. 96 on Reader Service Card for more information

IT WAS A BRIGHT EARLY DECEMBER DAY and Lieutenant Hudner was flying a Korean combat mission alongside another plane piloted by Ensign Jesse Brown. A burst of flak

caught the ensign's plane and he went spinning down, aflame. Lieutenant Hudner then deliberately crash landed near his flame-trapped shipmate. He radioed for help, after which he fought to keep the fire away from the fatally injured ensign until a rescue helicopter arrived. Today Lieutenant Hudner says:

"Maybe if America had been strong enough to discourage aggression two years ago, my friend, Jesse Brown, might be alive right now. So might thousands more of our Korea dead.

"For it's only too sadly true—today, in our world, weakness invites attack. And *peace is only for the strong.*

"Our present armed forces *are* strong—and growing stronger. But don't turn back the clock! Do your part toward *keeping* America's guard up by buying more . . . and more . . . and more United States Defense Bonds *now!* Back us up. And *together* we'll build the strong peace that all Americans desire!"

★ ★ ★

Remember that when you're buying bonds for defense, you're also building a personal reserve of savings. Remember, too, that if you don't save *regularly*, you generally don't save at all. So sign up today in the Payroll Savings Plan or the Bond-A-Month Plan. Buy United States Defense Bonds now!

Peace is for the strong...
Buy U. S. Defense Bonds now!

Lt.(jg) Thomas Hudner, Jr. U.S.N.

Medal of Honor

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COMMERCIAL REFRIGERATION AND AIR CONDITIONING